



MERIDIAN SCHOOL DISTRICT NEW OFFICE BUILDING MERIDIAN, MISSISSIPPI

PROJECT MANUAL

Project No. 25116

6 February 2026

100% CONSTRUCTION DOCUMENTS
VOLUME 1 OF 1



DALE | BAILEY
AN ASSOCIATION

One Jackson Place, Suite 250
188 East Capitol Street
Jackson, Mississippi 39201

Structural:
Mechanical:
Electrical:

Structural Design Group
GSK Mechanical
The Power Source LLC

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PROJECT TEAM LISTING

OWNER



Meridian Public School District

ARCHITECT OF RECORD

DALE | BAILEY
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Construction Documents prepared by

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*Architectural drawings and the specification sections
denoted in the Table of Contents with (A)*

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D|B PN 25116

Meridian School District New Office Building

Meridian, Mississippi

Issue Date: 06-Feb-2026

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02/06/2026

*Structural drawings and the specification sections
denoted in the Table of Contents with (S)*

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*Mechanical drawings and the specification sections
denoted in the Table of Contents with (FP, P or M)*

SEE MECHANICAL SPECIFICATIONS ON DRAWINGS

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ELECTRICAL ENGINEER

The Power Source PLLC

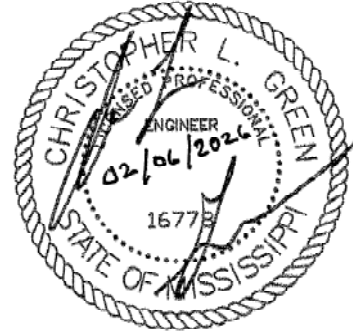
305 Hwy 51

Ridgeland, MS 39157

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*Electrical drawings and the specification sections
denoted in the Table of Contents with (E)*

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END OF SECTION 000110

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REQUIREMENTS

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SECTION 000115
LIST OF DRAWING SHEETS

PART 1 GENERAL

1.1 LIST OF DRAWINGS

- A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled titled 25116 Meridian School District New Office Building dated 6 February 2026, as modified by subsequent Addenda and Contract modifications.
- B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:

GENERAL

G-001 — INDEX & GENERAL PROJECT INFORMATION

G-021 — ADA CLEARANCES AND MOUNTING HEIGHTS

STRUCTURAL

S-001 — STRUCTURAL NOTES

S-100 — EXISTING FLOOR PLAN/ SECTIONS AND DETAILS

ARCHITECTURAL / SITE

AS101 — SITE PLAN

AD-101 — DEMOLITION PLAN

A-001 — FIRST FLOOR PLAN

A-002 — SECOND FLOOR PLAN

A-041 — REFLECTED CEILING PLANS

A-581 — MILLWORK DETAILS AND PLANS

A-582 — MILLWORK DETAILS

A-611 — FINISH & EQUIPMENT SCHEDULES

A-630 — DOOR AND WINDOW DETAILS

MECHANICAL

M-000 — MECHANICAL LEGEND, NOTES, AND SPECIFICATIONS

M-001 — FIRST FLOOR MECHANICAL PLAN

M-002 — SECOND FLOOR MECHANICAL PLAN

M-201 — MECHANICAL SCHEDULES

M-301 — MECHANICAL DETAILS

ELECTRICAL

E000 — ELECTRICAL LEGEND / LIGHT FIXTURE SCHEDULE

E001 — ELECTRICAL DETAILS

ED100 — DEMOLITION SITE PLAN

ED101 — DEMOLITION PLAN

E100 — LIGHTING PLAN – FIRST FLOOR

E101 — LIGHTING PLAN – SECOND FLOOR

E200 — POWER / AUXILIARY / MECHANICAL PLAN – FIRST FLOOR

E201 — POWER / AUXILIARY / MECHANICAL PLAN – SECOND FLOOR

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

DOCUMENT 001113 - ADVERTISEMENT FOR BIDS

1.1 PROJECT INFORMATION

- A. Notice to Bidders: Notice is hereby given that sealed bids will be received for the project named below by the Meridian Public School District
- B. Project Identification: 25116 Meridian School District New Office Building.
 - 1. Project Location: 1221 24th Ave, Meridian, MS 39301.
- C. Owner: Meridian Public School District, 1019 25th Avenue, Meridian, MS 38391.
 - 1. Owner's Representative: Dr. Amy J. Carter, Superintendent.
- D. Architect: Dale | Bailey, An Association, One Jackson Place, Suite 250, 188 East Capitol Street, Jackson, MS 39201-2100.
- E. Project Description: This project includes the renovation of an existing medical office into a new main office building for Meridian Public School District. This project will include the installation of a new window, installation of some new plumbing, new paint throughout, installation of new LVT throughout, and replacing all ceiling tile with new throughout. This project will also include the construction of some new casework. The existing access control system will also need to be updated to match the new access control system with new hardware and components to install. There will also be an update to the existing EIFS system to repair holes at the front of the building as well as adding the MPSD logo to the front of the building in EIFS.

1.2 BID SUBMITTAL AND OPENING

- A. The owner will receive sealed lump sum bids until the bid time and date at the location given below. Bid proposals must be delivered in a sealed envelope marked plainly on the outside of the envelope with the following: "Meridian School District New Office Building; Project number 24067 to be opened March 12, 2026" Envelope shall be addressed to Dr. Amy J. Carter, Superintendent of Schools, 1019 25th Avenue, Meridian, MS 38391.
- B. In addition, the envelope shall list the bidder's Company name, Company address and all applicable state and local license and registration numbers of the bidder. Envelopes not so marked are submitted at the risk of the bidder as the Owner and Architect assume no responsibility for the premature opening of any bid envelope by any employee of the Owner or Architect. The Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
 - 1. In addition, Electronic bids may be submitted through the website www.dalebaileyplans.com. Electronic bids are not required by the MPSD but offered as another means to submit a bid. Single stipulated sum bids will be received for all work required by the contract documents in accordance with the Instructions to Bidders
 - 2. Bid Date: March 12, 2026.
 - 3. Bid Time: 2:00 p.m., local time.
 - 4. Location: Meridian Public School District, 1019 25th Avenue, Meridian, MS 39301.

- C. Proposals shall be submitted in duplicate only upon the blank proposal forms provided with the specifications and must be accompanied by Proposal Security in the form of a Certified Check or acceptable Bid Bond in the amount equal to at least five percent (5%) of the Base Bid: such security to be forfeited as liquidated damages, not penalty, by any bidder who fails to carry out the terms of the proposal, execute a contract and post-Performance and Payment Bonds in the form and amount within the time specified. The Bid Bond, if used, shall be payable to the Owner.
- D. Bids will be thereafter publicly opened and read aloud.

1.3 BID SECURITY

- A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 90 days after opening of bids. The owner reserves the right to reject any and all bids and to waive informalities and irregularities.
- B. The owner reserves the right to postpone action and final decision for a period of up to ninety (90) days.

1.4 PREBID MEETING

- A. Prebid Meeting: See Document 002513 "Prebid Meetings."
- B. Prebid Meeting: A Prebid meeting for all bidders will be held on March 3, 2026, at 10:00 a.m. local time at the Office of Director of Operations, 4000 10th Street, Meridian, MS 38391. Prospective prime bidders are requested to attend.
 - 1. Bidders' Questions: Architect will provide responses at Prebid conference to bidders' questions received up to two business days prior to conference.

1.5 DOCUMENTS

- A. Printed Procurement and Contracting Documents: Obtain after February 11, 2026, by contacting Dale Bailey, An Association.
- B. Viewing Procurement and Contracting Documents: Examine after February 11, 2026, at the locations below:
 - 1. Bid documents are being made available via original paper copy or digital CD. Plan holders are required to register and order bid documents at www.dalebaileyplans.com. Bid documents are non-refundable and must be purchased through the website. All plan holders are required to have a valid email address for registration. Questions regarding website registration and online orders please contact Plan House Printing, 607 W. Main Street Tupelo MS 38804, (662) 407-0193.
 - 2. Bid Documents will only be made available to plan holders as entire documents. Partial sets will not be issued.

1.6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work by Substantial Completion July 17, 2026. Work is subject to liquidated damages.

1.7 BIDDER'S QUALIFICATIONS

- A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to the Owner will be required of the successful Bidder.

1.8 NOTIFICATION

- A. This Advertisement for Bids document is issued by Dale | Bailey, An Association.
- B. Advertisement dates are February 11, 2026, and February 18, 2026.
- C. Contact regarding questions, email: biddinginfo@dalepartners.com.

END OF DOCUMENT 001113

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**SECTION 002113
INSTRUCTION TO BIDDERS****PART 1 GENERAL****1.1 GENERAL REQUIREMENTS**

- A. Interpretations: Should a bidder find discrepancies in or omissions from the plans and specifications or be in doubt as to their written meaning, he should immediately notify the Architect in writing. The Architect will then send written instructions or interpretation to all known holders of the documents if deemed appropriate by the Architect. Neither the Owner nor the Architect will be responsible for nor bound by any oral instructions or for a bidder's failure to make inquiry.
- B. Contractor/Subcontractor Question/Answer Period: It is noted that questions will be received and answered on an unofficial basis. Binding answers to questions must be included in an official written addendum and the Contractor or Subcontractor is encouraged to provide written communications to the Architect for proper response. Address e-mailed written correspondence to biddinginfo@dalepartners.com.
- C. Addenda: Any addenda to the plans and / or specifications issued before or during the time of bidding will become a part of the Contract and receipt of same must be acknowledged by Bidder in his proposal.
- D. "Or Equal" Substitutions: Refer to General Conditions 3.2.2 and Section 016000- "Or Equal" Substitutions: Bidder is advised that some sections of the specifications may not allow for substitutions and that the requirements of the General Conditions and Section 016000 and any requirements in the technical specifications which do not conflict with and which are in addition to the General Conditions and Section 016000 may, in the Owner's sole discretion, result in the rejection of the request for "or equal" substitution.

1.2 BIDDING

- A. A Contract for Construction: lump sum, single bid, received from General Contractors and shall include General, Mechanical, Electrical, and Site work as well as all other work shown on plans and specified herein.
- B. Subcontractors and Suppliers: The Bidder is specifically advised that any person, firm or other party to whom it is proposed to award a Subcontract or purchase order under this contract must be acceptable to the Owner.
 - 1. The Owner may make such investigation as he deems necessary to determine the ability of the Bidder of subcontractors or suppliers to perform the work, and the Bidder shall furnish to the owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein within the time required.
 - 2. All subcontractors must have a current, valid, Contractor's License and/or Certificate of Responsibility where Bid exceeds \$75,000.00.
 - 3. Listing of Subcontractors and Suppliers:
 - a. So that the Owner may be assured that only qualified and competent subcontractors and suppliers will be utilized on the project and to prevent "bid-shopping" and/or "bid-chopping", each Bidder shall identify within seven (7) days after Bid receipt date the name of the subcontractor and supplier used by the Bidder in his bid for each subcontractor and supplier whose bid or quote exceeds \$75,000.00. Bidder's List shall be provided on the Listing Form provided with the Proposal Form. A Bidder's failure to indicate the name(s) of the subcontractors and major suppliers included in his lump sum price within seven (7) days after Bid receipt may result in the rejection of the Bidder's bid as non-responsive.
 - b. The successful Bidder shall use the subcontractor and supplier identified by him as being include in his lump sum price, provide however, the Bidder assumes the risk that

the subcontractor or supplier listed within seven (7) days after Bid receipt may result in the rejection of the Bidder's bid as non-responsive.

- c. If Bidder lists itself as a supplier for any of the classifications listed, then the Bidder will be required to furnish such product from its manufacturing inventory and to demonstrate to the Owner and Architect that it has satisfactory qualifications and prior experience manufacturing and furnishing such materials, equipment and/or products. If Bidder lists itself as a subcontractor for any of the classifications listed, then the Bidder will be required to perform the work with its own regularly employed personnel and to demonstrate to the Owner and Architect that it has satisfactory qualifications and prior experience performing such work with its own regularly employed personnel. The Owner reserves the right to reject any bid if the evidence submitted by Bidder fails to satisfy the Owner that the Bidder has satisfactory qualifications and prior experience performing such work and/or furnishing such materials, equipment and /or products.

1.3 CERTIFICATE OF RESPONSIBILITY

- A. Each bidder submitting a bid equal to or in excess of \$75,000.00 on public projects and equal to or in excess of \$100,000.00 on private projects must show on his bid and on the face of the envelope containing the bid, his Certificate of Responsibility Number, as required by Section 31-7-13 (latest revision) Mississippi Code. If the bid does not exceed \$75,000.00 on public projects and \$100,000.00 on private projects, a notation so stating must appear on the face of the envelope.
- B. Each subcontractor shall also have a Certificate of Responsibility Number, as required by Section 31-7-13 (latest revision), Mississippi Code.
- C. Evidence: No bid will be opened, considered or accepted unless the above information is given as specified. Sufficient evidence that said Certificate of Responsibility has been issued and is in effect at the time of receiving bids must be submitted if required by the Owner or the Architect. Likewise, it shall be the responsibility of the General Contractor to require a Certificate of Responsibility Number from any subcontractor that falls in the category of "B" above.
- D. In accordance with Mississippi law, if the Bidder is a joint venture, either the joint venture or all of the Contractors which make up the joint venture must hold certificates of responsibility from the State Board of Contractors.

1.4 BID BOND

- A. Use AIA Document A310, Bid Bond, 2010 Edition for execution of Bid Bond.

1.5 BID SECURITY

- A. Each bid, exceeding \$5,000.00 must be accompanied by the Bidder's certified check or a bid bond, duly executed by the Bidder as principal and having surety thereon, a surety company approved by the Owner and signed by an agent resident in Mississippi, in the amount of five percent of the bid. All bid bonds must be accompanied by the appropriate Power of Attorney designating the Mississippi Resident Agent.

1.6 OPENING OF PROPOSALS

- A. Refer to the Advertisement for Bid.

1.7 PREPARATION OF BID

- A. Conditions of Work: Each Bidder must fully inform himself of the conditions relating to the construction of the project and employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his Contract. The Contractor must employ methods or means to cause no interruptions of or interference with the work of any other Contractor.
- B. Examination of Site: All bidders, including the general contractor and subcontractors, will visit the site of the building, and inform themselves of all conditions. Failure to visit the site will in no way relieve the successful Bidder from his obligation to complete all work in accordance with the Contract Documents without additional cost to the Owner.

- C. Staging and Access: All Bidders, including the general contractor and subcontractors, acknowledge that the construction premises are restricted and that access is affected by the location of the project, by the facilities surrounding the project and by other construction either presently being performed or proposed to be performed during the performance of this Contract. All Bidders, including the general contractor and subcontractors, further acknowledge that such limitations in space and accessibility have been taken into account in estimating their bids.
- D. Laws and Regulations: The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project apply to the Contract. The successful Bidder shall be required to comply with all applicable laws, ordinances, rules and regulations at no additional adopted or become effective before or after bid opening.
- E. Obligation of Bidder: At the time of opening of bids, Bidder will be presumed to have inspected the site and to have read and be thoroughly familiar with the plans and specifications, including all addenda.
- F. Telegraphic and Facsimile Modifications: A Bidder may modify his bid by telegraphic or facsimile communication at any time, provided such communication is received by the Owner prior to the scheduled time for opening time or no consideration will be given the telegraphic or facsimile modifications.

1.8 PROPOSALS

- A. Form: Submit all proposals on forms provided and fill all applicable blank spaces without interlineations, alterations, or erasure and recapitulations of the work to be done. No oral, telegraphic, or telephonic proposals will be considered. Any addenda issued during the bidding must be noted on the Proposal Form.
- B. Withdrawal: Any bid may be withdrawn prior to the time for opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered. All bids are irrevocable offers to contract at the price bid which may not be withdrawn until Ninety (90) days after bid opening.
- C. Submittal: Submit bids in duplicate in an opaque sealed envelope bearing on the outside, the name and Certificate of Responsibility number of the Bidder, his address, bid opening date, and time.
- D. Any bid modification or qualification on the outside of the envelope will be considered only if accompanied by signature and title of person making the modification.
- E. Mailing: If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to: Dr. Amy J. Carter, Superintendent of Schools, Meridian Public School District, 1019 25th Avenue, Meridian, MS 38391.
- F. Ground Service: Dr. Amy J. Carter, Superintendent of Schools, Meridian Public School District, 1019 25th Avenue, Meridian, MS 38391.
- G. Bidders are urged to deliver their bid to the Owner. Owner will not be responsible for misdelivery of mail or express deliveries.

1.9 CONTRACT

- A. Award of Contract: Award shall be made to the lowest and best Bidder, pursuant to Mississippi law and these Instructions to Bidders. The lowest bid shall be the base bid or combination of base bid and those alternates which produce a total within available funds. The Owner reserves the right to waive irregularities and to reject any and all bids.
- B. Disqualification of Bidder: The Owner reserves the right to award to other than the low Bidder when, in the Owner's judgment, it is in his best interest to do so. For instance, a Bidder may be disqualified for such reasons as:
 - 1. Bidder being in arrears on existing contracts.
 - 2. Bidder being in litigation with the Owner or the institution/agency.

3. Bidder having defaulted on or failed to satisfactorily complete a previous contract with the Owner, including Bidder's failure to satisfactorily fulfill the warranty obligations of a previous contract with the Owner.
- C. The above is not an inclusive list.
- D. Security for Faithful Performance: When the bid exceeds \$4,000.00 and simultaneously with his delivery of the executed Contract, the Contractor will furnish a payment and a performance bond in accordance with Section 31-7-13 et. Seq. of the Mississippi Code (latest revision). The surety on such bonds will be a duly authorized surety company licensed to do business in the state of Mississippi which is acceptable to the owner, and which is listed on the United States' Treasury Department's list of acceptable sureties.
- E. Time of Completion: By submission of its bid, Bidder agrees to commence work on or before a date specified in a written "Notice to Proceed" and fully complete the project within the time stated in the Bid Proposal Form.
- F. Substantial Completion: By completion of the project shall be as defined by Section 9.8.1 of the General Conditions "... when the work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the work for its intended use."
- G. Final Acceptance/Completion: Final acceptance/completion of the project as defined in the General Conditions 9.10.2.1 requires the submittal by Contractor of all closeout documents, all ownership and maintenance manuals required by the technical sections of the Contract the Guarantee of Work required by the General Conditions 12.2.2.5 and 12.2.2.6 and the manufacturer's certifications. Bidder's attention is specifically directed to the General Conditions 9.8.4 for additional conditions precedent to final acceptance/completion of the project.
- H. Liquidated Damages for Failure to Enter Into Contract: The successful Bidder, upon his failure or refusal to execute and deliver the Contract and required bonds within ten days after he has received notice of the acceptance of his bid, will forfeit to the Owner as liquidated damages the security deposited with his bid.
- I. Liquidated Damages for Failure to Substantially Complete Project in Time Stipulated: Applicable when stipulated sum is shown in General Conditions 9.11.

1.10 BID DOCUMENTS

- A. Plans and specifications are available, unless noted otherwise on the Advertisement for Bid, at Dale Bailey's online planroom at www.dalebaileyplans.com.
- B. No partial sets of documents will be issued or accepted for return.

END OF DOCUMENT 002113

END OF SECTION

**SECTION 002513
PREBID MEETINGS****PART 1 GENERAL****1.1 PREBID MEETING**

- A. Architect will conduct a Prebid meeting as indicated below:
 - 1. Meeting Date: March 3, 2026.
 - 2. Meeting Time: 10:00 AM, local time.
 - 3. Location: Office of Director of Operations, 4000 10th Street, Meridian, MS 38391.
- B. Attendance:
 - 1. Prime Bidders: Attendance at Prebid meeting is recommended.
 - 2. Subcontractors: Attendance at Prebid meeting is recommended.
- C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of two business days prior to meeting.
- D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:
 - 1. Procurement and Contracting Requirements:
 - a. Advertisement for Bids.
 - b. Instructions to Bidders.
 - c. Bidder Qualifications.
 - d. Bonding.
 - e. Insurance.
 - f. Bid Security.
 - g. Bid Form and Attachments.
 - h. Bid Submittal Requirements.
 - i. Bid Submittal Checklist.
 - j. Notice of Award.
 - 2. Communication during Bidding Period:
 - a. Obtaining documents.
 - b. Access to Project Web site.
 - c. Bidder's Requests for Information.
 - d. Bidder's Substitution Request/Prior Approval Request.
 - e. Addenda.
 - 3. Contracting Requirements:
 - a. Agreement.
 - b. The General Conditions.
 - c. The Supplementary Conditions.
 - d. Other Owner requirements.
 - 4. Construction Documents:
 - a. Scopes of Work.
 - b. Temporary Facilities.
 - c. Use of Site.
 - d. Work Restrictions.
 - e. Alternates, Allowances, and Unit Prices.
 - f. Substitutions following award.
 - 5. Separate Contracts:
 - a. Work by Owner.
 - b. Work of Other Contracts.
 - 6. Schedule:
 - a. Project Schedule.
 - b. Contract Time.
 - c. Liquidated Damages.

- d. Other Bidder Questions.
- 7. Site/facility visit or walkthrough.
- 8. Post-Meeting Addendum.
- E. Minutes: Entity responsible for conducting the meeting will record and distribute meeting minutes to attendees and others known by the issuing office to have received a complete set of Procurement and Contracting Documents. Minutes of the meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
 - 1. Sign-in Sheet: Minutes will include list of meeting attendees.
 - 2. List of Planholders: Will be provided upon request.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED****END OF SECTION**

**SECTION 003126
EXISTING HAZARDOUS MATERIAL INFORMATION****PART 1 GENERAL****1.1 EXISTING HAZARDOUS MATERIAL INFORMATION**

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. This is a newer building built in the 2000's. No lead or asbestos is expected during the construction of this project. However, if lead or asbestos is found during the construction of this project, stop work immediately and notify the architect so that we may get plans together for remediation.
- C. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Section 024119 "Selective Structure Demolition" for notification requirements if materials suspected of containing hazardous materials are encountered.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION – NOT USED****END OF SECTION**

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**SECTION 004113
BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)****PART 1 GENERAL****1.1 BID INFORMATION**

- A. Bidder: _____.
- B. Project Name: 24067 Harris Complex Renovations.
- C. Project Location: 3951 12th Street, Meridian, MS 39307..
- D. Owner: Meridian Public School District, 1019 25th Avenue, Meridian, MS 38391.
1. Owner's Representative: Dr. Amy J. Carter, Superintendent.
- E. Architect: Dale | Bailey, an Association; One Jackson Place, Suite 250, 188 East Capitol Street, Jackson, Mississippi 39201.
- F. Architect Project Number: 24067.

1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Dale | Bailey and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
1. _____ Dollars
(\$ _____).

2.1 ALLOWANCES. INCLUDE THE ALLOWANCES BELOW IN THE BASE BID. REFER TO SECTION 012100-ALLOWANCES.

- A. Allowance No. 01: Lump Sum Contingency Allowance of Forty Thousand Dollars (\$40,000.00).

2.2 UNIT RATES. REFER TO SECTION 012200 - UNIT PRICES FOR DESCRIPTION OF UNIT PRICES.

- A. Unit Price 01: Removal and replacement of existing registers. \$ _____/Each

2.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 60 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:
1. _____ Dollars
(\$ _____).

3.1 IN THE EVENT OWNER DOES NOT OFFER NOTICE OF AWARD WITHIN THE TIME LIMITS STATED ABOVE, OWNER WILL RETURN TO THE UNDERSIGNED THE CASH, CASHIER'S CHECK, CERTIFIED CHECK, U.S. MONEY ORDER, OR BID BOND.**3.2 SUBCONTRACTORS AND SUPPLIERS**

- A. The following companies shall execute subcontracts for the portions of the Work indicated:
1. Concrete Work: _____.
 2. Masonry Work: _____.
 3. Roofing Work: _____.
 4. Plumbing Work: _____.

5. HVAC Work: _____.
6. Electrical Work: _____.

3.3 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect and shall fully complete the Work by July 17, 2026. Work is subject to liquidated damages.

3.4 ACKNOWLEDGMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
1. Addendum No. 1, dated _____.
 2. Addendum No. 2, dated _____.
 3. Addendum No. 3, dated _____.
 4. Addendum No. 4, dated _____.

3.5 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form and are attached hereto.
1. Bid Form Supplement - Allowances.

3.6 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed in Mississippi, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

3.7 SUBMISSION OF BID

- A. Respectfully submitted this _____ day of _____, 20____.
- B. Submitted By: _____ (Name of bidding firm or corporation).
- C. Authorized Signature: _____ (Handwritten signature).
- D. Signed By: _____ (Type or print name).
- E. Title: _____ (Owner/Partner/President/Vice President).
- F. Witnessed By: _____ (Handwritten signature).
- G. Attest: _____ (Handwritten signature).
- H. By: _____ (Type or print name).
- I. Title: _____ (Corporate Secretary or Assistant Secretary).
- J. Street Address: _____.
- K. City, State, Zip: _____.
- L. Phone: _____.
- M. License No.: _____.
- N. Federal ID No.: _____ (Affix Corporate Seal Here).

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED****END OF SECTION**

**SECTION 004313
BID SECURITY FORM**

PART 1 GENERAL

1.1 BID FORM SUPPLEMENT

- A. A completed bid bond form is required to be attached to the Bid Form.

1.2 BID BOND FORM

- A. AIA Document A310, "Bid Bond," is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.
- B. Copies of AIA standard forms may be obtained from The American Institute of Architects; www.aia.org/contractdocs/purchase/index.htm; email: docspurchases@aia.org; (800) 942-7732.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

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**SECTION 006000
PROJECT FORMS****PART 1 GENERAL****1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS**

- A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:
 - 1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."
 - a. The General Conditions for Project are AIA Document A201-2017 "General Conditions of the Contract for Construction."
 - 2. AIA Document A101-2017 Exhibit A.
 - 3. The General Conditions are included in the Project Manual.
 - 4. The Supplementary Conditions for Project are incorporated into a modified copy of the General Conditions included in the Project Manual.

1.2 ADMINISTRATIVE FORMS

- A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.
- B. Copies of AIA standard forms may be obtained from the American Institute of Architects; www.aiacontractdocs.com or www.aiacontractdocs.com/aiacontracts.org; (800) 942-7732.
- C. Preconstruction Forms:
 - 1. Form of Performance Bond and Labor and Material Bond: AIA Document A312-2010 "Performance Bond and Payment Bond."
 - 2. Form of Certificate of Insurance: AIA Document G715-2017 "Supplemental Attachment for ACORD Certificate of Insurance 25."
- D. Information and Modification Forms:
 - 1. Form for Requests for Information (RFIs): AIA Document G716-2004 "Request for Information (RFI)."
 - 2. Form of Request for Proposal: AIA Document G709-2018 "Proposal Request."
 - 3. Change Order Form: AIA Document G701-2017 "Change Order."
 - 4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710-2017 "Architect's Supplemental Instructions."
 - 5. Form of Change Directive: AIA Document G714-2017 "Construction Change Directive."
- E. Payment Forms:
 - 1. Schedule of Values Form: AIA Document G703-1992 "Continuation Sheet."
 - 2. Payment Application: AIA Document G702-1992/703-1992 "Application and Certificate for Payment and Continuation Sheet."
 - 3. Form of Contractor's Affidavit: AIA Document G706-1994 "Contractor's Affidavit of Payment of Debts and Claims."
 - 4. Form of Affidavit of Release of Liens: AIA Document G706A-1994 "Contractor's Affidavit of Payment of Release of Liens."
 - 5. Form of Consent of Surety: AIA Document G707-1994 "Consent of Surety to Final Payment."

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED****END OF SECTION**

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DRAFT AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum*

AGREEMENT made as of the «TBD» day of «TBD» in the year «Two Thousand Twenty-Five.»

(In words, indicate day, month and year.)

BETWEEN the Owner:

(Name, legal status, address and other information)

«Dr. Amy J. Carter, Superintendent
Meridian Public School District
1019 25th Avenue
Meridian, MS 38391»

and the Contractor:

(Name, legal status, address and other information)

«TBD »

for the following Project:

(Name, location and detailed description)

«25116 Meridian School District New Office Building
Meridian, Mississippi»

The Architect:

(Name, legal status, address and other information)

«Dale | Bailey, An Association»
«One Jackson Place, Suite 250
188 East Capitol Street
Jackson, MS 39201-2100»
«Telephone Number: 601-352-5411»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

§ 1.1 The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), all sections of the Project Manual, including Drawings, Specifications, and Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all as amended and all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9. Contract Documents also include the Advertisement for Bid and Instructions to Bidders.

§ 1.2 This Agreement, as amended, represents the entire and integrated agreement between the Owner and the Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. In the event of conflict, terms and conditions contained in the Agreement, as amended, shall take precedence over terms and conditions contained in the General Conditions, as amended, and the terms and conditions in the General Conditions, as amended, shall take precedence over all other terms and conditions contained in the other Contract Documents. The Advertisement for Bid and Instructions to Bidders shall take precedence over the Contractor's bid or proposal, unless specifically agreed otherwise herein.

§ 1.3 The Meridian Public School District board of trustees (the "School Board"), by a majority vote, is the only representative of the Owner, an independent school district, having the power and authority to enter into or amend this Agreement, to approve and execute a Change Order or Construction Change Directive modifying the Contract Sum, or to agree to an extension to the date of Substantial or Final Completion. The Owner designates the following as the individual authorized to sign documents on behalf of the School Board: Dr. Amy J. Carter, Superintendent, or her successor.

§ 1.4 The School Board designates the authorized representatives identified in Paragraph 8.2 to act on its behalf in all other respects.

ARTICLE 2 THE WORK OF THIS CONTRACT

§ 2.1 The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

§ 2.2 Contractor shall, at its own expense as part of the Contract Sum, secure all licenses, furnish all labor, material, plant, office space, tools, equipment, machinery, scaffolding, cartage, electric current for power purposes

and provide all other things and personnel necessary for the full and diligent prosecution of the Work, all in compliance with applicable statutes, building codes, ordinances and regulations and in a first class workmanlike manner in strict accordance with the requirements of the Project as well as the directions of the Project Architect and to the reasonable satisfaction of the Owner. Contractor shall be responsible for supervision, coordination of its sub-trades, and for the performance of all actions reasonably required to complete the Work even if not specifically shown in the plans and specifications but can be reasonably inferred.

§ 2.3 The Contractor is required to furnish a payment and performance bond. Such bonds shall be executed by it with a fidelity or surety company authorized to transact business in Mississippi in form and amount satisfactory to the Owner. The Performance Bond shall guarantee the faithful performance of all contract obligations of this Contract. The Payment Bond shall comply with the requirements of Mississippi regarding unconditional payment bonds and assure the prompt payment of all claims of lienors and laborers. The cost of the bond shall be included within the Contract Sum.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

[☒] The date of this Agreement.

[☐] A date set forth in a notice to proceed issued by the Owner.

[☐] Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

☐

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[☐] Not later than ☐ (☐) calendar days from the date of commencement of the Work.

[☒] By the following date: «July 17, 2026»

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

« »

Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

§ 3.4 Liquidated Damages. Time is of the essence and a material consideration of the Contract. The Contractor acknowledges and recognizes that the Owner is entitled to full and beneficial occupancy and use of the completed Work following expiration of the Contract Time. The Contractor further acknowledges and agrees that if the Contractor fails to complete substantially or cause the Substantial Completion of any portion of the Work in either of the specified phases within the Contract Time, the Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, the

Owner and the Contractor agree to liquidated damages as set forth below in this Paragraph 3.4. The term substantial completion is as defined in Article 9.8.1 of the General Conditions.

§ 3.4.1 Subject to the requirements of Article 8.3 of the General Conditions, if the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, the Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the per diem amount of **Five Hundred Dollars (\$500.00)** upon the first day following expiration of the Contract Time and continuing until the actual Date of Substantial Completion.

§ 3.4.2 These Liquidated Damages are agreed to be a good faith and reasonable pre-estimate of the Owner's actual damages and are not considered to be a penalty. Contractor and Owner hereby acknowledge and agree that Owner's right to Liquidated Damages hereunder is not intended to be exclusive of any other right, power, or remedy of Owner hereunder or under any other Contract Documents for other defaults by Contractor (i.e., defaults not arising under this Subsection 3.4), but each and every such right, power and remedy shall be cumulative and concurrent and shall be in addition to the right to Liquidated Damages provided for in this Paragraph 3.4.

§ 3.4.3 The Owner may deduct liquidated damages described in this Paragraph 3.4 from any unpaid amounts then or thereafter due the Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at a rate equal to the highest lawful rate of interest payable by the Contractor.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be «TBD» (\$ «TBD»), subject to additions and deductions as provided in the Contract Documents. The Contract Sum is detailed on the Initial Schedule of Values attached as Exhibit N/A. To the extent the Cost of the Work exceeds the Contract Sum, the Contractor shall bear such costs in excess of the Contract Sum without reimbursement or additional compensation from the Owner.

§ 4.1.1 The Contract Sum contains an Owner's Contingency in the amount of Forty Thousand Dollars (\$40,000.00). This contingency is for the sole use of the Owner to be used for changes in the scope of Work, if any, or for the betterment of the Project. Owner's authorized representative may approve any expenditure from Owner's Contingency without further School Board approval. If the Owner's Contingency is not expended or not fully expended, then any unused portion shall belong to the Owner and shall be credited to the Owner in calculating final payment.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
None	

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item	Price	Conditions for Acceptance
« »		

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
«Allowance No. 1: Lump Sum Contingency Allowance for Construction. »	\$40,000.00

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
Unit Price #01: Removal and Replacement of existing registers.	Each	

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

«\$500.00/day »

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month. The Contractor shall submit monthly Applications for Payment for approval to both the Architect and Owner on AIA Form G702, or such other form agreed to in writing by Owner and Contractor. Continuation sheets shall be submitted on AIA Form G703. If the Architect and Owner approve the application, then the Architect shall submit a Certificate for Payment to the Owner. The Architect and Owner may require any additional information deemed necessary and appropriate to substantiate the Application for Payment. Materials that are verified to be on the jobsite or other approved location for use in the Project may also be incorporated into the Application for Payment.

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the «10th» day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the «23rd» day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «sixty» («60») days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

- 3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- 1 The aggregate of any amounts previously paid by the Owner;
- 2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- 3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- 4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- 5 Retainage withheld pursuant to Section 5.1.7.
- 6 If Owner is entitled to deduct liquidated damages, or any other damages or amounts provided in the Contract Documents, including clean-up fees, then Owner shall be entitled to deduct such liquidated damages, amounts and fees at any time.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« »

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

«The Owner will retain five percent (5%) of the amount due to Contractor on account of progress payments until the work is at least fifty percent (50%) complete, on schedule, and satisfactory in the Architect's opinion, at which time the Owner may in its discretion release fifty percent (50%) of the retainage held to date for distribution to the appropriate subcontractors and suppliers, provided that future retainage shall be withheld at the rate of two and one-half percent (2 ½ %). »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201-2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

§ 5.3 Payment Procedures

§ 5.3.1. Subject to the provisions of Article 9 of the General Conditions, the following payment procedures shall also apply to both progress and final payments.

1. At the time of the submission of an Application for Payment the Contractor shall furnish to the Architect: (1) a certification of work performed on a form approved by the Owner; (2) waivers of lien for all work done by Contractor, all lienors giving notice and any such other persons, firms or corporations performing work in accordance with the Contract Documents to the date of the application for payment; and (3) evidence of payment to all laborers working directly or indirectly for the Contractor through the date of the application for payment. The Owner shall have the right at any time and in its sole discretion to make payments directly to laborers and/or material men and/or sub-contractors of the Contractor, or to make any such payments jointly to such payees and the Contractor.
2. Payments made to the Contractor are received by it in trust to be applied first to the amount owing to any person who has performed labor or furnished materials to the Contractor for the performance and work under this agreement and before the Contractor shall use any monies received for any other purposes.
3. Partial or final payment will not be payable or due at the option of the Owner in the event that any of the following conditions exist: (1) Defective or damaged work is not remedied by Contractor; (2) Claims have been filed by laborers, material men and/or subcontractors under this agreement; (3) Contractor fails to make the proper application for payment or fails to comply with Mississippi's mechanics lien law; (4) Contractor becomes bankrupt or insolvent; (5) This agreement or any other agreement between Owner and Contractor is in breach; and (6) Any insurance required of Contractor ceases to be effective and in force.
- 4.. Acceptance of final payment by Contractor operates as a release to the Owner of all claims and liability to the Contractor for all construction work performed by Contractor.

§ 5.3.2 The compensation payable to the Contractor hereunder shall not be increased because of the imposition of any taxes, or of increases in the price of any labor, material or services.

§ 5.3.3 No payment made hereunder shall operate as an admission on the part of the Owner that this Agreement, or any part thereof has been complied with, or preclude any action for damages against the Contractor should this Agreement not be faithfully executed in every respect or should the Work furnished and installed by the Contractor not meet with the approval of the Owner

§ 5.4 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

«2.00» % «per annum»

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Mediation

Any claim, dispute, or other matter in question arising out of or related to this Agreement, if not resolved within 14 days following the notice of claim through discussions among the parties' officers having authority to resolve the claim, dispute, or other matter, shall be subject to mediation as a condition precedent to litigation. The parties shall work in good faith to select and agree upon a mediator within thirty (30) days after a demand for mediation is made by either party. If the parties cannot agree upon a mediator, then each party shall designate their preferred

mediator as a representative. Each party's mediator representative shall then select a mediator that will conduct the mediation between the parties. If such matter relates to or is the subject of a lien arising out of the Contractor's services, the Contractor may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the matter by mediation or litigation.

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[☐] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[☒] Litigation in a court of competent jurisdiction

[☐] Other *(Specify)*

« ☐ »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 The Contract may be terminated by the Owner for cause or for convenience after ten (10) calendars days' written notice to Contractor. Further, Owner or the Contractor may terminate this Agreement as provided in Article 14 of AIA Document A201–2017.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

«Dr. Amy J. Carter, Superintendent
Meridian Public School District
1019 25th Avenue
Meridian, MS 38391»

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

«TBD »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

§ 8.7.1 The Agreement shall be governed by the laws of the State of Mississippi, and the mandatory and exclusive venue of any and all litigation shall be in Lauderdale County, Mississippi.

§ 8.7.2 As a material consideration of the making of this Agreement, the modifications to this Agreement shall not be construed against the maker of said modifications.

§ 8.7.3 Notwithstanding anything to the contrary in this Agreement, or in any document forming a part hereof, there shall be no mandatory arbitration for any dispute arising hereunder.

§ 8.7.4 Article 1 of the General Conditions shall govern Contractor's use of the Construction Documents.

§ 8.7.5 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors. As part of that responsibility, Contractor shall enforce the Owner's alcohol-free, drug-free, tobacco-free, harassment-free and weapon-free policies and zones, which will require compliance with those policies and zones by Contractor's employees, subcontractors, and all other persons carrying out the Contract. Further, Contractor shall use commercially reasonable efforts to perform background checks on all Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors and for which will be present at the jobsite for the Project.

§ 8.7.6 Contractor shall require all construction workers, whether Contractor's own forces or the forces of Contractor's subcontractors, to wear identification tags on the front of their persons during all times that they are on Owner's property. Such identification tags shall contain a current photograph and the worker's full name in a typeface large enough to be seen from a reasonable distance.

§ 8.7.7 Contractor shall require all construction workers, whether Contractor's own forces or the forces of Contractor's subcontractors, to park their personal motor vehicles on Owner's property only in the parking places designated by the Owner's campus principal. Any vehicles not parked in the appropriate locations shall be towed at the vehicle owner's sole expense.

§ 8.7.8 Contractor shall follow, and shall require all employees, agents or subcontractors to follow applicable ordinances of the municipality in which the Project is located.

§ 8.7.9 Contractor shall institute a theft deterrence program designed to restrict construction worker access to properties of Owner that are currently in use, to maintain supervision of Contractor's and Contractor's subcontractor's forces, and to reimburse the Owner or those persons suffering a theft loss which results from Contractor's forces or Contractor's subcontractor's forces' actions, omissions, or failure to secure the Work or adjoining property.

§ 8.7.10 The Contractor may not assign its responsibilities, duties, obligations and rights under this Agreement,

without the express written consent of the Owner. This does not prevent Contractor from engaging subcontractors to perform various phases of the Project, but Contractor shall be fully responsible to Owner for the work, actions and omissions of all such subcontractors.

§ 8.7.11 This Agreement, in its entirety, shall be binding upon all the parties hereto, their respective successors, heirs, executors, administrators or assigns.

§ 8.7.12 Execution of this Agreement shall constitute approval and acceptance of all terms, covenants and conditions as modified and contained in the Contract Documents.

§ 8.7.13 This Agreement is subject to all applicable federal and state laws, rules, and regulations. Invalidity of any portion of this Agreement under the laws of the State of Mississippi or of the United States shall not affect the validity of the remainder of this Agreement.

§ 8.7.14 By signing this Agreement, Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents), as a material inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Work

- .1 The Contractor is authorized to do business in Mississippi under Mississippi Code §31-3-1 et seq. and is otherwise properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the Contractor and over the Work and the Project.
- .2 Contractor is financially solvent, able to pay all debts as they mature, and possessed of sufficient working capital to complete the Work and perform all obligations hereunder and that it has no reasonable belief that any of its subcontractors are not financially solvent, able to pay all debts as they mature, and possessed of sufficient working capital to complete their respective portion of the Work.
- .3 The Contractor is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so.
- .4 The Contractor's execution of this Agreement and performance thereof is within the Contractor's duly authorized powers.
- .5 The Contractor's duly authorized representative has visited the site of the Project, is familiar with the local conditions under which the Work is to be performed and has correlated observations with the requirements of the Contract Documents.
- .6 The Contractor possesses a high level of experience and expertise in the business administration, construction, construction management, and superintendence of projects of the size, complexity, and nature of this particular Project and will perform the Work with the care, skill, and diligence of such a contractor.

§ 8.7.15 No delay or omission by Owner in exercising any right or power accruing upon the noncompliance or failure of performance by Contractor of any of the provisions of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver by Owner of any of the covenants, conditions or agreements hereof to be performed by Contractor shall not be construed to be a waiver of any subsequent breach thereof or of any other covenant, condition or agreement herein contained.

§ 8.7.16 Contractor stipulates that Owner is a political subdivision of the State of Mississippi, and as such, enjoys immunities from suit and liability as provided by the Constitution and laws of the State of Mississippi. By entering into this Agreement, Owner does not waive any of its immunities from suit and/or liability, except as otherwise specifically provided herein and as specifically authorized by law.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

<< >>

.5 Drawings

Number	Title	Date
<< See Below >>	25116 Meridian School District New Office Building	6 February 2026

General

- G-001 — Index & General Project Information
- G-021 — Ada Clearances and Mounting Heights

Structural

- S-001 — Structural Notes
- S-100 — Existing Floor Plan/ Sections and Details

Architectural / Site

- AS101 — Site Plan
- AD-101 — Demolition Plan
- A-001 — First Floor Plan
- A-002 — Second Floor Plan
- A-041 — Reflected Ceiling Plans
- A-581 — Millwork Details and Plans
- A-582 — Millwork Details
- A-611 — Finish & Equipment Schedules
- A-630 — Door and Window Details

Mechanical

- M-000 — Mechanical Legend, Notes, and Specifications
- M-001 — First Floor Mechanical Plan
- M-002 — Second Floor Mechanical Plan
- M-201 — Mechanical Schedules
- M-301 — Mechanical Details

Electrical

- E000 — Electrical Legend / Light Fixture Schedule
- E001 — Electrical Details
- ED100 — Demolition Site Plan
- ED101 — Demolition Plan
- E100 — Lighting Plan – First Floor
- E101 — Lighting Plan – Second Floor
- E200 — Power / Auxiliary / Mechanical Plan – First Floor
- E201 — Power / Auxiliary / Mechanical Plan – Second Floor

.6 Specifications

Section	Title	Date	Pages
«Division 1 thru 49»	25116 Meridian School District New Office Building	6 February 2026	

.7 Addenda, if any:

Number	Date	Pages
«TBD »		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages
« »		

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
« »			

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

MERIDIAN PUBLIC SCHOOL DISTRICT

« TBD»

OWNER (Signature)

«Dr. Amy J. Carter, Superintendent»

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)

DRAFT AIA® Document A101® – 2017

Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the «TBD» day of «TBD» in the year «Two Thousand Twenty-Six» (In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

«25116 Meridian School District New Office Building
Meridian, Mississippi»

THE OWNER:
(Name, legal status and address)

«Dr. Amy J. Carter, Superintendent
Meridian Public School District
1019 25th Avenue
Meridian, MS 38391»

THE CONTRACTOR:
(Name, legal status and address)

«TBD »

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit
<< >>	

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:

(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit
<< >>	

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

- [☐] **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.
- [☐] **§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.
- [☐] **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.
- [☐] **§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.
- [☐] **§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.
- [☐] **§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.
- [☐] **§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

- [☐] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.

(Indicate applicable limits of coverage or other conditions in the fill point below.)

« »

[« »] **§ A.2.5.2 Other Insurance**

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits
« »	

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than Two Million Dollars (\$2,000,000.00) each occurrence, Four Million Dollars (\$4,000,000.00) general aggregate, and « » (\$ « ») aggregate for products-completed operations hazard, providing coverage for claims including:

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the Work involves such hazards.
- .11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than **One Million Dollars (\$ 1,000,000.00)** per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than **One Hundred Thousand Dollars (\$ 100,000.00)** each accident, **One Hundred Thousand Dollars (\$ 100,00.00)** each employee, and **One Hundred Thousand Dollars (\$ 100,000.00)** policy limit.

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than **One Million Dollars (\$ 1,000,000.00)** per claim and **One Million Dollars (\$ 1,000,000.00)** in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the

appropriate fill point.)

- [**«X»**] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below: *(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)*

« »

- [**« »**] **§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than **« »** (\$ **« »**) per claim and **« »** (\$ **« »**) in the aggregate, for Work within fifty (50) feet of railroad property.
- [**« »**] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than **« »** (\$ **« »**) per claim and **« »** (\$ **« »**) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.
- [**«X»**] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.
- [**« X»**] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.
- [**« »**] **§ A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

« »

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type

Payment Bond

Penal Sum (\$0.00)

The amount of the initial Contract Sum, plus the value of subsequent modifications and labor performed and materials or equipment supplied by others.

Performance Bond

The amount of the initial Contract Sum, plus the value of subsequent modifications and labor performed and materials or equipment supplied by others.

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement and ensure that, among other requirements, Owner is entitled to recovery of legal, design and delay costs resulting from default thereunder. Contractor shall also provide a Warranty Bond on an A313 standard form without revisions.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Owner shall be included as an additional insured on all insurance policies obtained and maintained by Contractor.

If requested by Owner, Contractor shall obtain and maintain a Dual Obligatee rider in favor of Owner's lender, if any, for the Payment and Performance Bonds required under this Agreement.

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

«Owner shall be included as an additional insured on all insurance policies obtained and maintained by Contractor.

If requested by Owner, Contractor shall obtain and maintain a Dual Obligatee rider in favor of Owner's lender, if any, for the Payment and Performance Bonds required under this Agreement. »

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DRAFT AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

«25116 Meridian School District New Office Building
Meridian, Mississippi»
« »

THE OWNER:

(Name, legal status and address)

«Dr. Amy J. Carter, Superintendent
Meridian Public School District
1019 25th Avenue
Meridian, MS 38391»
« »

THE ARCHITECT:

(Name, legal status and address)

«Dale | Bailey, An Association»
«One Jackson Place, Suite 250
188 East Capitol Street
Jackson, MS 39201-2100»
«Telephone Number: 601-352-5411

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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12 UNCOVERING AND CORRECTION OF WORK

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The Contract Documents shall include the Instructions to Bidders, the plans, the specifications, including Divisions 0 through 49, all Addenda and modifications to the plans and/or specifications, the Agreement between the Owner and Contractor, the performance and payment bonds, the notice to proceed and any executed change orders. Information and documentation pertaining to soil investigation data, laboratory investigations, soil borings and related information included herein are not part of the Contract Documents. In the event of a conflict between the provisions of Division 0 and any other section of the Contract Documents, such other sections(s) shall govern.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties. Large scale drawings shall govern over small scale drawings where there are differences or conflicts between such drawings. Where the word 'similar' appears on the plans, it shall be interpreted to mean 'identical' and shall require the Contractor to coordinate the actual conditions and dimensions of the location where the 'similar' conditions are shown to occur.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.7.1 The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. In the event of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation. Should the Contractor observe any inconsistency within the Contract Documents, he shall bring them to the Architect's attention for resolution as soon as possible after originally observed.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 It is the intent of the Contract Documents that the Contractor shall properly execute and complete the Work described by the Contract Documents, and unless otherwise provided in the Contract, the Contractor shall provide all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services, whether temporary or permanent or whether or not incorporated in the Work, in full accordance with the Contract Documents and reasonably inferable from them as necessary to produce the intended results.

§ 1.2.5 The Contract Documents shall be interpreted collectively, each part complementing the others and consistent with the intent of the Contract Documents. Unless an item shown or described in the Contract Documents is specifically identified to be furnished or installed by the Owner or others or is identified as "Not in Contract ("N.I.C"), the Contractor's obligation relative to that item shall be interpreted to include furnishing, assembling, installing, finishing, and/or connecting the item at the Contractors' expense to produce a product or system that is complete, appropriately tested, and in operable condition ready for use or subsequent construction or operation by the Owner or separate contractors. The omission of words or phrases for brevity of the Contract Documents, the inadvertent omission of words or phrases, or obvious typographical or written errors shall not defeat such interpretation as long as it is reasonably inferable from the Contract Documents as a whole.

Words or phrases used in the Contract Documents which have well-known technical or construction industry meanings are to be interpreted consistent with such recognized meanings unless otherwise indicated.

Except as noted otherwise, references to standard specification or publications of associations, bureaus, or organizations shall mean the latest edition of the referenced standard specification or publication as of the date of the Advertisement of Bids.

Any doubt as to the meaning of the Contract Documents or any obscurity as to the wording of them, shall be promptly submitted in writing to the Architect for written interpretation, explanation, or clarification.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect’s consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 Evidence of the Owner’s Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as “confidential,” the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the

Contractor may disclose “confidential” information, after seven (7) days’ notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose “confidential” information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner’s control and relevant to the Contractor’s performance of the Work with reasonable promptness after receiving the Contractor’s written request for such information or services.

§ 2.3.6

§ 2.4 Owner’s Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

The rights and remedies under this Article 2.4 are in addition to and do not in any respect limit any other rights of the Owner, including its termination rights under Article 14.

§ 2.5 Owner’s Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner’s expenses and compensation for the Architect’s additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term “Contractor” means the Contractor or the Contractor’s authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. Some Sections of the Specifications may not allow substitution of materials, products, or equipment. Where substitution is allowed the request for substitution will only be considered if made in strict accordance with the requirements of Article 3.4.4 below and Section 016300 of the specifications.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 After the Contract has been executed, the Owner and the Architect may consider a request for the substitution of products in place of those specified only under the conditions set forth in Section 016300 of the specifications.

By making requests for substitutions, the Contractor:

- .1 Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respect to that specified;
- .2 Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- .3 Certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- .4 Shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects at its costs.

All substitutions shall be submitted within 30 days of the Notice to Proceed, as per Section 016300 of the specifications.

§ 3.4.5 Contractor represents that it has independently investigated, considered and understands the labor conditions in the area surrounding the Project and acknowledges that such conditions may impact the Contractor's cost and/or time of performance of the Contract. Therefore, Contractor further represents that the Contract Price is based upon Contractor's independent investigations into such labor conditions and that the Contract time is reasonable and the date of Substantial Completion is obtainable. As a result, Contractor assumes the risk of increased costs, if any, incurred by it arising out of or related to such labor conditions and acknowledges that Contractor and its surety will reimburse Owner for any additional costs Owner incurs arising out of or related to such labor conditions.

§ 3.4.6 Materials shall conform to manufacturer's standards in effect as of the date they are approved and shall be installed in strict accordance with manufacturer's directions.

§ 3.4.7 **Rejection of Defective Work.** The Owner or Architect's inspection of the Work shall not relieve the Contractor of its responsibilities to perform the Work in accordance with the Contract Documents and all defective work shall be corrected. Unsuitable work may be rejected by the Architect or Owner, whether or not such work and materials have been previously overlooked or misjudged by the Architect or Owner and accepted for payment. If the Work or any part of the Work shall be found defective any time before the final completion of the Work, the Contractor shall immediately correct such defect satisfactory to the Architect or Owner. If any material brought on the site for use in the Work, or selected for use in the Work, shall be rejected by the Architect or Owner as unsuitable or nonconforming with the Contract Documents, the Contractor shall immediately remove such materials from the

vicinity of the Work. Nothing contained herein shall operate in any manner as a waiver of any claim Contractor may have against the Owner or the Architect relating to the inspection of the Work.

§ 3.4.8 Debris.

§ 3.4.8.1 The Contractor shall not permit the accumulation of debris, both exterior and interior. The Work area shall always be kept satisfactorily clean. The Contractor shall remove debris from the Work site and dispose of it at any private or public dump the Contractor may choose. The Contractor shall arrange for and obtain any approvals necessary from the owners or officials in charge of such dumps and shall bear all costs, including fees resulting from such disposal, in the Contract Price, as applicable.

§ 3.4.8.2 Garbage shall be removed as frequently as necessary in order to satisfy the requirements of this section.

§ 3.4.8.3 No open fire shall be permitted on site.

§ 3.4.8.4 Chemical waste shall be stored in corrosion-resistant containers, removed from the Project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of chemical waste shall be according to requirements of the Environmental Protection Agency (EPA) and the applicable state and local agencies.

§ 3.4.8.5 Fueling and lubricating of vehicles and equipment shall be conducted to afford the maximum protection against spills and evaporation. Lubricants to be discarded or burned shall be disposed of according to approved procedures meeting all applicable federal, state and local regulations. In case of an oil or hazardous materials spill large enough to violate federal, state or applicable local regulations, the Architect or Owner shall be notified immediately. The Contractor shall be responsible for immediately cleaning up any such oil or hazardous waste spills resulting from its operations. Any costs incurred in cleaning up any such spills shall not increase the GMP or Price, as applicable.

§ 3.4.9 Site and Weather Protection. The Contractor shall take necessary precautions during the execution of the Work involving demolition not to disturb or damage any existing structure, landscaping, walks, roads or other items scheduled to remain. Subject to the other terms of the Contract Documents, the Contractor shall restore any damaged items to original condition as directed by the Architect or Owner. The Contractor shall provide and erect acceptable barricades, fences, signs and other traffic devices to protect the Work from traffic and the public necessary and as required by applicable laws, ordinances, codes, rules and regulations.

§ 3.4.10 Archaeological and Historical Resources. All items having any apparent historical or archaeological interest discovered during any construction activities shall be carefully preserved and reported immediately to the Owner for determination of appropriate actions to be taken. Any increases to Contractor's time or cost of performance due to historical or archaeological items discovered on the site shall entitle Contractor to a Change Order equitably adjusting the Contract Time and the Contract Price accordingly.

§ 3.4.11 Safety Requirements.

§ 3.4.11.1 The Contractor must comply with all federal, state and local safety laws and regulations of the applicable authority in connection with the Work performed under this Contract.

§ 3.4.11.2 This Project is subject to compliance with Public Law 92-596 "Occupational Safety and Health Act of 1970" (OSHA) with respect to all rules and regulations concerning construction, U.S. Code Title 29, Section 651 et seq., including Volume 36 numbers 75 and 105, of the Federal Register as amended, and as published by the U.S. Department of Labor.

§ 3.4.11.3 As between Owner and Contractor, Contractor will maintain a Safety Program that requires compliance by everyone on the Project Site.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's

warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. Contractor is responsible to comply and to assure compliance by its subcontractors and suppliers with all local, state and federal statutes, ordinances, regulations or requirements relating to the performance of the Work, including but not limited to: OSHA and health and safety requirements; labor requirements; worker's compensation and unemployment requirements; insurance requirements; equal opportunity requirements, tax and withholding requirements; noise requirements; hazardous substance requirements; and waste disposal requirements. Contractor is further responsible for giving all notices required by all of the foregoing law. Contractor shall indemnify and hold harmless the Owner and their respective employees, officers and agents from any claims, damages, fines, penalties and attorney fees incurred by Owner or its employees, officers or agents as a result of Contractor's failure to comply with the foregoing obligations.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

The Contractor shall also employ a competent project manager who shall be primarily responsible for the Contractor's home office activities in connection with the Contract.

The Owner shall have the right, which shall be exercised in a reasonable fashion, to approve the project manager and/or superintendent employed by the Contractor, either before or during the progress of construction.

The superintendent and project manager for the project shall be designated by the Contractor at the pre-construction conference. After Owner's approval of such project manager and superintendent, they shall not be replaced by the Contractor without the Owner's prior written consent, which consent is required unless the Contractor submits proof satisfactory to the Owner that the superintendent and/or the project manager should be terminated by the Contractor for cause.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's

construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 To the extent that the Date for Substantial Completion is impacted by any concealed condition or other event for which Contractor is entitled to a time extension, Contractor shall provide Owner with a proposal to accelerate the performance of the Work including estimated costs to be incurred to mitigate the time impact such event shall have on Substantial Completion of the Work. If accepted by Owner, a Change Order will be executed to reflect the change in the Contract Price and the Contract Time if any.

§ 3.10.5 The Contractor shall have weekly progress meetings at the Job Site. Progress of the Work shall be reported in detail with reference to the Construction Schedule. Each interested Subcontractor shall have a competent representative present to report the condition of its portion of the Work and to receive information.

§ 3.10.6 The Contractor will provide or notify Owner or Owner's representative if applicable of needed approvals of submittals, requests for information and requests for change, Owner selections or Owner information or services more than fourteen (14) days prior to the time such approvals or information will be needed so as not to delay the Work. Contractor will further advise Owner and Owner's representative of the date by which such selections must be made. Contractor may not seek to extend the Contract Completion Date for delays in Owner selections or Owner information if Contractor fails to give Owner notice of the need for selections.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4. All Change Orders, Construction Change Directives and field directives shall require the approval of the Owner in writing to be binding on the Owner and before Contractor is required to commence the changed Work.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall

be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.2.5 The Contractor's unauthorized substitution of any subcontractor, supplier, person, or entity previously identified by Contractor in accordance with Article 5.2.1 shall entitle the Owner to reject the work, materials or product furnished and require removal and replacement at no additional cost to the Owner.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1. The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces and to award separate contracts either in connection with other portions of the Project or other construction or operation on the site. In such event, the Contractor shall coordinate its activities with those of the Owner and of Separate Contractors so as to facilitate the general progress of all work being performed by all parties.

Cooperation will be required in the arrangement for the storage of materials, and in the detailed execution of the Work.

The Contractor, including his subcontractors, shall keep informed of the progress and the detailed work of the Owner or Separate Contractors and shall immediately notify the Architect of lack of progress or delays by Separate Contractors which are affecting Contractor's Work. Failure of Contractor to keep informed of the progress of the work of the Owner or Separate Contractors and/or failure of Contractor to give notice of lack of progress or delays by the Owner or Separate Contractors shall be deemed to be acceptance by Contractor of the status of progress by Separate Contractors for the proper coordination and completion of Contractor's Work. If, through acts or neglect on the part of the Contractor, the Owner or any Separate Contractors shall suffer loss or damage or assert any claims of whatever nature against the Owner, the Contractor shall defend, indemnify and hold harmless the Owner from any such claims or alleged damages, and the Contractor shall resolve such alleged damages or claims directly with the Separate Contractors.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. Contractor shall be entitled to a claim for an increase in the Price or an equitable adjustment in the Price only in the following circumstances and compliance with the requirements of this Agreement and Article 15 of the General Conditions. When submitting its Change Order proposal, the Contractor shall include and set forth in clear and reasonable detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule to the extent then reasonably known by Contractor. The Contractor shall furnish spreadsheets from which the breakdowns were prepared, plus spread sheets if requested of any Subcontractors.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work. No course of conduct or dealings between the parties, nor verbal express or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents in the absence of written Notice as provided in the Contract Document.

§ 7.1.4 The combined overhead (overhead includes general home office, field personnel, superintendents, and all costs attributable to field and office personnel), taxes (including Mississippi's 3.5 percent gross receipts tax), insurance and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

- .1 For the Contractor, the Work performed by the Contractor's own forces, fifteen percent of the cost.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractors, ten percent of the amount due the Subcontractor.
- .3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, fifteen percent of the cost.
- .4 For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractor, ten percent of the amount due the Sub-subcontractor.
- .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.7.
- .6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving an amount over Five Hundred Dollars be approved without such itemization.

§ 7.1.5 If the methods set forth in Section 7.1.4 is not applicable, the Contractor, provided he receives a written order signed by the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be subject to a recommendation by the Architect on the basis of the reasonable expenditures and savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. The Architect recommendation shall be advisory and admissible in any proceeding, but it shall not be binding on Contractor or Owner in the absence of a mutual agreement. If the Owner and Contractor cannot reach a mutual agreement, any Claim shall be subject to the provisions of Article 15.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

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

§ 7.2.2 Contractor's execution of a change order constitutes a final settlement to the Contract Sum and construction schedule and the Contract Time for all matters relating to or arising out of the change in the Work that is the subject of the change order including, but not limited to, all direct and indirect costs associated with such change, all extended direct job site and home office overhead expenses and any and all delay and impact cost for the change, whether alone or in combination with other changes, including any impact, ripple or cumulative effect resulting therefrom, if any.

§ 7.2.3 Adjustments to the Contract Sum by change order shall be based upon one of the methods set forth in Article 7.3.3.1, 7.3.3.2, 7.3.3.3 or 7.3.3.4, as appropriate. A reasonable allowance for the combined overhead and profit included in the change order shall be based upon the schedule set forth in Article 7.1.4, as supplemented.

§ 7.2.4 In order to facilitate consideration of change order requests, all such requests, except those involving an

amount less than \$500 must be accompanied by a complete itemization of costs, including labor, materials and subcontractor costs which shall likewise be itemized. Changes for more than \$500 will not be approved without such itemization.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will

affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.1.1 The words "other causes beyond the Contractor's control" as used in Subparagraph 8.3.1 shall not be interpreted as pertaining to bad weather days. The term "consecutive calendar days", as used in the bid form and the Agreement Between the Owner and Contractor to define a specific time period, shall include bad weather days. The term "bad weather days" shall be defined as days which adverse weather conditions, such as rain, snow, sleet, wind, fog, thunderstorms, hurricanes, lightning, temperature, rising water, or other extreme weather conditions, were excessive to the extent that the Contractor could not access the building site or could not perform the work in its proposed or proper sequence. No time extensions shall be granted for "bad weather days".

§ 8.3.1.2 Notwithstanding any other provisions of the Agreement Between the Owner and Contractor, it is mutually understood that the time extensions for changes in the work will depend on the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work not be altered.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. No delay, interference, hindrance or disruption, from whatever source or cause, in the progress of the Contractor's Work shall be a basis for an extension of time and/or additional compensation, unless the delay, interference, hindrance or disruption (1) is without the fault and not the responsibility of the Contractor, its subcontractors and/or suppliers and (2) directly affects the overall completion of the Work as reflected on the critical path of the Contractor's updated and accepted construction schedules. The Contractor expressly agrees that

the Owner shall have the benefit of any float in the construction schedule and that delays to construction activities, which do not affect the overall completion of the Work, do not entitle the Contractor to any extension in the Contract Time and/or increase in Contract Sum.

§ 8.3.4 All claims by the Contractor for an increase in the Contract Time must follow the procedures set forth in Articles 15.1.2, 15.1.3, 15.1.5 and 15.1.6, including the requirement that the Contractor give written notice of any claim within twenty-one (21) days after occurrence of the event giving rise to such claim or within twenty-one (21) days after the Contractor first recognizes the condition giving rise to the claim, whichever is earlier

§ 8.3.5 If the Contractor submits a schedule indicating or otherwise expressing an intent to complete the Work prior to the date of substantial completion, the Owner shall have no liability to the Contractor for any failure by the Contractor to complete the Work prior to the expiration of the Contract Time.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. The form of Application for Payment will be the current edition of the AIA Document G702, Application and Certification for Payment, supported with AIA Document G703, Continuation Sheet.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.2.1 Payment for materials stored at some location other than the Project site, may be approved by the Architect and the Owner after the Contractor has submitted the following items:

- .1 An acceptable Lease Agreement between the Contractor or one of its subcontractors or suppliers and the owner of the land, or building, where the materials are stored covering the specific area where the materials are located.
- .2 Consent of Surety or other acceptable bond to cover the materials stored off-site.
- .3 All Perils Insurance coverage for the full value of the materials stored off-site.
- .4 A Bill of Sale from the Manufacturer to the Contractor for the stored materials.
- .5 A complete list and inventory of materials manufactured, stored and delivered to the storage site and of materials removed from the storage site and delivered to the Project.
- .6 A review by the Architect of the materials stored off-site prior to release of payment.
- .7 Proof of payment of stored materials verified by the supplier must be submitted to the Architect within thirty (30) days of the Application for Payment on which payment for said materials was made. If proof of payment is not submitted within thirty (30) days, then payment for said materials will be deducted from the next application for payment and withheld until proof of payment is received.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the

Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 The letter from the Contractor which is required by Article 15.1.6.2 has not been received.
- .9 Failure to properly coordinate all phases of the work;
- .10 Failure to verify that all materials, equipment, and work in full accordance with the Contract Documents;
- .11 Failure to comply with the specified submittal procedures.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial completion for purposes of this Contract occurs only upon Contractor's compliance with the following conditions precedent: (a) the Contractor furnishes to the Architect all close-out documents required by the Contract Documents in a form satisfactory to the Architect and the Owner; (b) the Contractor furnishes the manufacturers' certifications and/or warranties required by the Contract Documents; (c) the Contractor furnishes the Guarantee of Work set forth herein below; and (d) the Architect certifies that the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended purpose.

The Guarantee of Work shall be submitted as a separate document signed by Contractor and Contractor's Surety and shall state the following:

Contractor and Contractor's Surety hereby guarantee that all Work performed on the Project is free from defective and/or nonconforming materials and workmanship and that for a period of one year from the date of substantial completion or such longer period of time as may be called for in the Contract Documents for such portions of the Work, Contractor or its Surety will repair and/or replace any defective and/or nonconforming materials and workmanship in accordance with the requirements of the Contract Documents.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.2.1 The Contractor shall be responsible for the costs of inspections made by the Architect including any and all other related expenses incurred by the Architect for providing services for the Project required by failure of the Contractor to achieve final acceptance / completion of the Project within 30 days after the first occurrence of the below described events:

1. Specified date of Substantial Completion; or
2. Actual date of Substantial Completion.

The costs of the Architect's additional services shall be deducted by the Owner from the Contractor's final application for payment to pay the Architect for additional services required by the Contractor's failure to achieve final completion of the project within the 30-day period described above.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. Contractor's execution of the Certificate of Substantial Completion constitutes Contractor's representation that the items on the list accompanying the Certificate can and will be completed by Contractor and his subcontractors within thirty (30) days of Contractor's execution of the Certificate. Based upon this representation by Contractor and upon the acknowledgment of the Architect that the listed items remaining can be completed within thirty (30) days, the Owner agrees to execute the Certificate of Substantial Completion. If Contractor fails to complete the items on the list within thirty (30) days of Contractor's execution of the Certificate, then the Owner, at its option and without prejudice to any other rights or remedies it may have under this Contract or otherwise and without notice to Contractor or Surety, may proceed to have same completed and to deduct the reasonable costs thereof from the amounts then due or thereafter to become due to Contractor.

§ 9.8.6 The costs of inspections made by Architect which are not required by Articles 4, 9.8 or 9.10 of the General Conditions and any other inspection required by Article 12 other than the year-end inspection itself, will be the responsibility of the Contractor and will be deducted by the Owner from the Application for Payment submitted after the Owner's receipt of the Architect's statement for its costs of additional inspections. These costs are not the result of Contractor's failure to and timely complete the Contract within the specified time and, therefore, such costs are in addition to and not a part of any liquidated damages calculation, if any

§ 9.8.7 Upon the Owner's acceptance of the Work as substantially complete and upon Contractor's compliance with all conditions precedent to substantial completion as stated in Section 008000, Article 9.8.1 and upon application by the Contractor, the Owner will pay to the Contractor all retainage held by the Owner less an amount equal to the greater of (a) two percent (2%) of the Contract Sum, or (b) two hundred percent (200%) of the estimated cost of the Work remaining to be performed by the Contractor in accordance with the Architect's determination. Final payment, including all retainage, shall be made at the time and in the manner provided for final payment in accordance with the provisions of Article 9.10 and the additional conditions precedent to final acceptance / payment set forth in Section 008000, Article 9.8.5.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The

stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.11 Liquidated Damages

§ 9.11.1 See Article 3.4.1 of the A101-2017 Standard Form of Agreement Between Owner and Contractor

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Architect shall not administer the Contractor's performance of its duties and responsibilities under Article 10 (including Articles 10.1 through 10.6) because the initiation, maintenance and supervision of safety precautions and programs is the sole responsibility of the Contractor as means, methods, techniques, sequences, and procedures of construction and, therefore, is not part of the Contractor's scope of Work which is to be administered by the Architect.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.1.5 All insurance coverage procured by the Contractor shall be provided by insurance companies having policy holder ratings no lower than "A" and financial ratings not lower than "XII" in the *Best's Insurance Guide*, latest edition in effect as of the date of the Contract, and subsequently in effect at the time of renewal of any policies required by the Contract Documents.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for

damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of

uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5. Prior to the end of the one-year period, (three years for roof systems), the Architect may schedule a warranty inspection which shall be attended by the Architect, the Owner, the Contractor, and all major subcontractors. During this inspection, the parties shall identify all defective and/or nonconforming items and fix a time within which all defective and/or nonconforming items shall be repaired and/or replaced.

Within the one-year period (three years for roof systems) provided for in the Guarantee of Work required by Article 9.8.1, if repairs or replacement are requested by Owner in connection with the Work which, in the opinion of the Owner, are rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the Contract Documents, the Contractor and/or its Surety shall promptly, upon receipt of notice from and without expense to the Owner, place in satisfactory condition in every particular, all such Work, correct all defects therein and make good all damages to the building, site, equipment or contents thereof; and make good any work or materials or the equipment and contents of said buildings or site disturbed in fulfilling any such guarantee. If, after notice or within the time agreed upon by the parties at the warranty inspection, the Contractor and/or its Surety fail to proceed promptly to comply with the terms of the guarantee, the Owner may have the defects corrected in accordance with Article 2.5 and the Contractor and his Surety shall be liable for all expenses incurred. All special guarantees applicable to definite parts of the Work stipulated in the Contract Documents shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by Mississippi law.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.
- .5 fails to achieve Substantial Completion of the Project as described in Section 008000, Article 9.8.5, within the time stated therein; or
- .6 fails to meet any deadline required by the Contract. Contractor acknowledges that time is of the essence of this Contract and that all deadlines required by the Contract are critical to timely completion of the Contract. Therefore, Contractor agrees that its failure to meet any deadline constitutes a substantial and material breach of this Contract, entitling the Owner to terminate the Contract.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

.1 Concealed Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than five (5) days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum. Contract Time shall be addressed in accordance with Section 15.1.5 below. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons.

.2 Claims for Additional Cost For Reasons Other than Concealed Conditions. If the Contractor claims that it should be entitled to additional compensation for any damage sustained or may be sustained (i) by reason of any act or omission of the Owner or any other person for which the Owner is responsible or by reason that Owner directed the Contractor to perform any work which it believes is not required to be performed by the provisions of each Contract (collectively an "Event"), then Contractor shall within five (5) days after it first had notice of an Event, deliver to the Architect and Owner a written statement of the nature and basis of its claim and within twenty (20) days, the Contractor shall deliver to the Owner a verified itemized statement of the details and amount of such damage or extra work. If the Owner shall require any additional data, the Contractor shall furnish the same within three (3) days after written demand therefore. Unless such notice, statements and data shall be delivered within the times aforesaid, all claims for additional compensation or damages for such matters shall be deemed waived. Compliance by the Contractor with the provisions of this paragraph shall not, however, be deemed an admission by the Owner nor raise any presumption as to the validity or correctness of the claim. Contractor shall not be entitled to additional compensation by reason of any inconsistency or deficiency in the design documents.

.3 Change Orders and Construction Change Directives. To the extent that an Owner wishes to change the scope of Work under the Contract documents, the parties shall agree to any compensation and time as part of such agreed Change Order as provided in Article 7.2. Contractor shall not be obligated to perform any material change in the scope of Work in the absence of an executed Change Order. Neither the Owner nor Architect shall be entitled to utilize the provisions for Construction Change Directives as provided in Article 7.3 for material changes in the scope of Work under the Contract Documents

.4 The Owner will not be responsible for damages or additional compensation due to delays in the work caused by, government delays, utility company delays, or other delays beyond the control of the Owner.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor is delayed on its critical path at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, concealed conditions or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time as provided below. The entitlement to a time extension provided in this paragraph shall not apply if the performance of the Work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension in the Contract Time under the Contract Documents. The Contractor further acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (i) is not caused, or could not have been anticipated, by the Contractor and (ii) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay or reasonable likelihood that the delay will occur for such reasonable time as the Architect may determine.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial

Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Either party may file for mediation of a dispute at any time. Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 LITIGATION

All claims or other matters in dispute which cannot be resolved by mutual agreement or Mediation shall be subject to litigation in a Court of appropriate jurisdiction. The Parties agree to that the exclusive jurisdiction and venue for any and all claims or disputes arising from or related to the Project or the Contract Documents shall be in Lauderdale County, Mississippi. The prevailing party shall be entitled to their reasonable attorney fees and expenses incurred in any litigation of a claim or dispute relating to any Project.

**SECTION 009113
ADDENDA**

PART 1 GENERAL

1.1 ADDENDA

- A. Any Addendum issued prior to bid date on this Project will be included in Section 009113 and become a part of the Standard Form of Agreement between the Owner and the Contractor.
- B. Acknowledge receipt of Addenda in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.
- C. The Bidder is responsible for obtaining a copy of each Addendum issued. The Addenda will be posted on the Architect's website. They will also be available for purchase from participating plan rooms.
- D. Bidders who have contacted the Architect's office and requested to be included on the Bid Registry List will be notified by email when an Addendum has been issued to the email address provided by the Bidder at registration.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

3.1 END OF DOCUMENT 009113

END OF SECTION

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DIVISION 01

GENERAL REQUIREMENTS

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**SECTION 011000
SUMMARY****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Phased construction.
 - 4. Work under Owner's separate contracts.
 - 5. Owner-furnished/Contractor-installed (OFICI) products.
 - 6. Contractor's use of site and premises.
 - 7. Coordination with occupants.
 - 8. Work restrictions.
 - 9. Specification and Drawing conventions.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

- A. Project Identification: 25116 Meridian School District New Office Building.
 - 1. Project Location: 1221 24th Avenue, Meridian, MS 39301.
- B. Owner: Owner: Meridian Public School District, 1019 25th Avenue, Meridian, MS 38391.
 - 1. Owner's Representative: Owner's Representative: Dr. Amy J. Carter, Superintendent.
- C. Architect: Dale | Bailey, an Association, One Jackson Place, Suite 250, 188 East Capitol Street, Jackson, Mississippi, 39201.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. This project includes the renovation of an existing medical office into a new main office building for Meridian Public School District. This project will include the installation of a new window, installation of some new plumbing, new paint throughout, installation of new LVT throughout, and replacing all ceiling tile with new throughout. This project will also include the construction of some new casework. The existing access control system will also need to be updated to match the new access control system with new hardware and components to install. There will also be an update to the existing EIFS system to repair holes at the front of the building as well as adding the MPSD logo to the front of the building in EIFS.
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract.

1.4 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during the entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated. Where HVAC is impacted by scope of work, Contractor is responsible for maintaining Temperature and humidity levels in a range generally accepted as comfortable to the general public.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1.7 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: All hours and days are available for use.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.
- F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with Owner's representative.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
 - 3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
 - 4. Specification requirements are to be performed by the Contractor unless specifically stated otherwise.
- B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

- C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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**SECTION 012100
ALLOWANCES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Contingency allowances.
- C. Related Requirements:
 - 1. Section 0140000 "Quality Requirements" for procedures governing the use of allowances for testing and inspection.
- D. The contingency allowance or any allowance shall have all overhead and profit added at bid time to the bid price, such that any expenditure of allowances cannot add any overhead and profit to them.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.3 ACTION SUBMITTALS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.6 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner are not included in the allowance and should be included in the contract sum and will not be charged as an addition to the contract sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 01: Lump Sum Contingency Allowance.
1. Include the Sum of Forty Thousand Dollars (\$40,000.00) total for Construction Contingency Allowance.

END OF SECTION

**SECTION 012200
UNIT PRICES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.

1.2 DEFINITIONS

- A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION****3.1 SCHEDULE OF UNIT PRICES**

- A. Unit Price No. 1: Removal and replacement of existing registers, each.

END OF SECTION

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**SECTION 012500
SUBSTITUTION PROCEDURES****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

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

- Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution does not require extensive revisions to the Contract Documents.

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

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

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**SECTION 012600
CONTRACT MODIFICATION PROCEDURES****PART 1 GENERAL****1.1 SUMMARY**

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

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, Architect's Supplemental Instructions.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use Forms acceptable to the Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - 7. Work Change Proposal Request Form: Use a form acceptable to Architect.

1.4 ADMINISTRATIVE CHANGE ORDERS

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

1.5 CHANGE ORDER PROCEDURES

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

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 . Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

**SECTION 012900
PAYMENT PROCEDURES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements
 - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
 - 3. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 4. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administration forms and schedules, including the following.
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703 .
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling fivepercent of the Contract Sum and subcontract amount.
 - 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 - 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 - 6. Provide separate line item in the schedule of values for initial cost of materials, each subsequent stage of completion, and for total installed value for that part of the Work.

7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit five signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Sustainable design action plans, including preliminary project materials cost data.
 5. Schedule of unit prices.
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.

8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- H. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Updated final statement, accounting for final changes to the Contract Sum.
 3. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
 4. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
 5. AIA Document G707-1994, "Consent of Surety to Final Payment."
 6. Evidence that claims have been settled.
 7. Final liquidated damages settlement statement.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

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**SECTION 013100
PROJECT MANAGEMENT AND COORDINATION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project meetings.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request from Owner, Architect or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Submit Project Manager and Superintendent's resume showing experience on similar projects in scope, size, and cost.
- C. Submit Masonry Restoration Subcontractor resume showing experience on similar projects in scope, size, and cost.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.

2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally, where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
 1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Review: Architect will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.

1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, the Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Name of Architect.
 4. Date.
 5. Name of Contractor.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to Architect.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Software log with not less than the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. Originator of the RFI (i.e. Contractor, Architect or Owner).
 6. RFI description.
 7. Date the RFI was submitted.
 8. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

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

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
 1. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.
 - l. Use of the premises and existing building.
 - m. Work restrictions.
 - n. Working hours.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for moisture and mold control.
 - r. Procedures for disruptions and shutdowns.
 - s. Construction waste management and recycling.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Possible conflicts.
 - i. Time schedules.
 - j. Weather limitations.
 - k. Manufacturer's written instructions.
 - l. Warranty requirements.
 - m. Temporary facilities and controls.
 - n. Space and access limitations.
 - o. Regulations of authorities having jurisdiction.
 - p. Testing and inspecting requirements.
 - q. Required performance results.
 - r. Protection of adjacent work.
 - s. Protection of construction and personnel.
 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at monthly intervals.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals.

- 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site use.
 - 9) Temporary facilities and controls.
 - 10) Progress cleaning.
 - 11) Quality and work standards.
 - 12) Status of correction of deficient items.
 - 13) Field observations.
 - 14) Status of RFIs.
 - 15) Status of Proposal Requests.
 - 16) Pending changes.
 - 17) Status of Change Orders.
 - 18) Pending claims and disputes.
 - 19) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

**SECTION 013200
CONSTRUCTION PROGRESS DOCUMENTATION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Construction schedule updating reports.
 - 3. Ghant Chart schedule requirements.
 - 4. Daily construction reports.
 - 5. Site condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file.
 - 2. PDF file.
- B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
 - 3. Total Float Report: List of activities sorted in ascending order of total float.

4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.
- E. Construction Schedule Updating Reports: CPM Schedule must be updated and submitted to architect weekly and submitted with Applications for Payment.
- F. Daily Construction Reports: Submit at monthly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion .
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
 1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Uninterruptible services.
 - b. Use-of-premises restrictions.
 - c. Provisions for future construction.
 - d. Seasonal variations.
 - e. Environmental control.
 2. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion
- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 1. Unresolved issues.
 2. Unanswered Requests for Information.
 3. Rejected or unreturned submittals.

4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.
- F. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule two days before each regularly scheduled progress meeting.
 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.
- H. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.6 GANTT-CHART SCHEDULE REQUIREMENTS

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 14 days of date established for commencement of the Work .
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.7 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. List of subcontractors at Project site.
 2. Approximate count of personnel at Project site.
 3. Equipment at Project site.
 4. Material deliveries.
 5. High and low temperatures and general weather conditions, including presence of rain or snow.
 6. Accidents.
 7. Meetings and significant decisions.
 8. Stoppages, delays, shortages, and losses.
 9. Meter readings and similar recordings.
 10. Emergency procedures.
 11. Orders and requests of authorities having jurisdiction.
 12. Change Orders received and implemented.
 13. Construction Change Directives received and implemented.
 14. Services connected and disconnected.
 15. Partial completions and occupancies.
 16. Substantial Completions authorized.

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 013233
PHOTOGRAPHIC DOCUMENTATION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Concealed Work photographs.
 - 3. Periodic construction photographs.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Submit photos on CD-ROM or thumb-drive . Include copy of key plan indicating each photograph's location and direction.
 - 2. Identification: Provide the following information with each image description in file metadata tag :
 - a. Name of Project.
 - b. Date photograph was taken.
 - c. Description of location, vantage point, and direction.

1.3 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.
- B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- C. Metadata: Record accurate date and time from camera.
- D. File Names: Name media files with date and sequential numbering suffix.

1.4 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs with maximum depth of field and in focus.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points. .
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- C. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:

1. This includes all concealed areas prior to concealment as well as all structural elements found damaged.
 2. Underground utilities.
 3. Underslab services.
 4. Piping.
 5. Electrical conduit.
 6. Waterproofing and weather-resistant barriers.
- D. Periodic Construction Photographs: Take 20 photographs coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 013300
SUBMITTAL PROCEDURES****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Digital Drawing Software Program: The Contract Drawings are available in Autodesk Revit model and exported AutoCAD drawings.
 - c. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
 - d. The following digital data files will be furnished for each appropriate discipline:
 - 1) Floor plans.
 - 2) Reflected ceiling plans.
 - 3) Architectural Drawing Files as requested..
 - 4) Consultant's participation will be at the discretion of the Consultant.
 - (a) Structural drawings will not be provided.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.

- d. Product name.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 - 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before or concurrent with Samples.
 - 6. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Compliance with specified standards.
 - c. Notation of coordination requirements.
 - d. Notation of dimensions established by field measurement.
 - e. Relationship and attachment to adjoining construction clearly indicated.
 - f. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect and Owner will retain one each Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- G. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- H. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- I. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- J. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- K. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- M. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- N. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- O. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

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

PART 3 EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect's Submittal Transmittal Form that accompanies each submittal will appropriately indicate action.
 1. The Architect's signature will indicate that submittal(s) have been reviewed for the limited purpose of checking general conformance with information given, and the design concept expressed in the Contract Documents. This review was not conducted for the purpose of determining accuracy and completeness of other quantities, substantiating instructions for installation, assembly, performance of materials, equipment, systems, or construction means and methods -- all of which remain the responsibility of the Contractor. Reviewer remarks, if any, are attached.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION

SECTION 013324: STRUCTURAL SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Structural submittals include shop drawings, diagrams, illustrations, schedules, performance charts, nomenclature charts, samples, brochures and other data prepared by the Contractor or any subcontractor, manufacturer, supplier, fabricator, or distributor and which illustrate some portion of the Project.

1.2 RELATED SECTIONS

- A. Division 1 Sections

1.3 SUBMITTAL PROCEDURES

- A. Submittals shall be accompanied by a transmittal letter with the following information:
 - 1. Project name.
 - 2. Contractor's name.
 - 3. Date submitted.
 - 4. Description of items submitted; identify Work and product by Specification Section.
 - 5. Number of drawings and other pertinent data.
- B. Provide blank space on each submittal for the Architect/Structural Engineer's review stamp.
- C. Submit four prints of each shop drawing and four copies of other structural submittals.
- D. Contractor shall direct specific attention on the submittal to any deviation from the Construction Documents.

1.4 CONTRACTOR RESPONSIBILITY

- A. Contractor shall make all submittals in advance of installation or construction to allow the Architect/Structural Engineer sufficient time for review.
- B. Contractor shall review all submittals and shall stamp and sign each sheet of shop drawings and product data and sign each sample to certify compliance with requirements of Construction Documents. Submittals received without the contractor's stamp of review will be returned to the contractor for review and resubmittal.
- C. Contractor shall understand that the submittal of the required documents does not constitute compliance with the requirements of the Construction Documents; only submittals reviewed by the Architect/Structural Engineer constitute compliance.
- D. It is the Contractor's responsibility to furnish equipment, materials, and labor for the Project which meets the requirements of the codes and authorities quoted as well as the Construction Documents. Proprietary items specified herein only establish a minimum functional and aesthetic standard and it is incumbent upon the Contractor to ascertain conformance of these proprietary items or any proposed substitution with the codes and authorities.

- E. By reviewing, approving and submitting shop drawings, product data, or samples, Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, member sizes catalog numbers, and similar data and that he has checked and coordinated shop drawings with the requirements of the Project and of the Construction Documents.
- F. Work requiring shop drawings, whether called for by the Construction Documents or requested by the Contractor, shall not commence until the Architect/Structural Engineer has reviewed the submission. Work may commence if the Contractor verifies the accuracy of the Architect/Structural Engineer's corrections and notations and complies with them without exception and without requesting change in Contract Sum or Contract Time.

1.5 ARCHITECT / STRUCTURAL ENGINEER REVIEW

- A. Architect/Structural Engineer will review submittals with reasonable promptness.
- B. Architect/Structural Engineer's review or corrections refer only to the general arrangement and conformance of the subject of the submittals with the design concept of the Project and with the information given in the Construction Documents. Under no conditions should the Contractor consider the review to include the dimensions, quantities, and details of the items nor the approval of an assembly in which the item functions.
- C. Architect/Structural Engineer's review shall not relieve the Contractor from responsibility for errors or omissions in the submittals.
- D. Architect/Structural Engineer's review of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Construction Documents unless the Contractor has directed specific attention to the deviation at the time of submission and the Architect/Structural Engineer has given written approval to the specific deviation.
- E. Architect/Structural Engineer's review of submittals shall not be construed as authorizing any change in the Contract Sum or Contract Time.

1.6 SHOP DRAWINGS

- A. Present in a clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail of Construction Documents.
- B. Reproduction of Structural Drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor.
- C. Identify field dimensions; show relationship to adjacent or critical features of Work or products.
- D. A copy of the marked structural shop drawings with the Architect/Structural Engineer's review stamp is to be maintained at the job site.

1.7 PRODUCT DATA

- A. Submit only pages that are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number. Show reference

standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

- B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information that is not applicable.
- C. Provide manufacturer's preparation, assembly, and installation instructions.

1.8 SAMPLES

- A. Submit full range of manufacturer's standard finishes, except where more restrictive requirements are specified, indicating colors, textures, and patterns.
- B. Submit samples to illustrate functional characteristics of products, including parts and attachments as required by Architect/Structural Engineer.
- C. Approved samples that are of proper size may be incorporated in Work.
- D. Label each sample with identification.
- E. Field Finishes: Provide full samples at Project, at location acceptable to Architect/Structural Engineer, as required by individual Specification Section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed Work.

1.9 RESUBMITTALS

- A. When submittals are returned to the Contractor with the Architect/Structural Engineer's corrections the Contractor shall make the required corrections. Upon request, resubmit one corrected set.
- B. Contractor shall direct specific attention on the resubmittal to all revisions including those requested by the Architect/Structural Engineer on previous submission.

1.10 DISTRIBUTION

- A. Distribute reproductions of shop drawings, copies of product data, and samples which bear the Architect/Structural Engineer's review stamp to job site file, Record Documents file, subcontractors, suppliers, other affected contractors, and other entities requiring information.
- B. Work shall be in accordance with and performed from the reviewed drawings.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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**SECTION 014000
QUALITY REQUIREMENTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements, consisting of multiple products, assemblies, and subassemblies, with cutaways enabling inspection of concealed portions of the Work.
 - a. Include each system, assembly, component, and part of the exterior wall to be constructed for the Project. Colors of components shall be those selected by the Architect for use in the Project.
 - 2. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall have the same meaning as testing agency.
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.3 REFERENCE STANDARDS

- A. 29 CFR 1910 - Occupational Safety and Health Standards; Current Edition.
- B. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2025a.

1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Statement: Submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.6 ACTION SUBMITTALS

- A. Mockup Shop Drawings: For integrated exterior mockups.
 - 1. Include plans, sections, elevations, and details, indicating materials and size of mockup construction.
 - 2. Indicate manufacturer and model number of individual components.
 - 3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.7 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.

2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 1. Date of issue.
 2. Project title and number.
 3. Name, address, telephone number, and email address of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 1. Statement on condition of substrates and their acceptability for installation of product.
 2. Statement that products at Project site comply with requirements.
 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 5. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
 1. Statement that equipment complies with requirements.
 2. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 3. Other required items indicated in individual Specification Sections.

1.9 QUALITY ASSURANCE

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

- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329 ; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- G. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - d. When testing is complete, remove test specimens and test assemblies, and mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect , with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups of size indicated.
 - 2. Build mockups in location indicated or, if not indicated, as directed by Architect.
 - 3. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
 - 5. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 7. Promptly correct unsatisfactory conditions noted by Architect's preliminary review, to the satisfaction of the Architect, before completion of final mockup.
 - 8. Approval of mockups by the Architect does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 9. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 10. Demolish and remove mockups when directed unless otherwise indicated.
- I. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings . Coordinate installation of exterior envelope materials and products for which mockups

are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1. Coordinate construction of the mockup to allow observation of air barrier installation, flashings, air barrier integration with fenestration systems, and other portions of the building air/moisture barrier and drainage assemblies, prior to installation of veneer, cladding elements, and other components that will obscure the work.

1.10 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
 1. Engage a qualified testing agency to perform quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. Security and protection for samples and for testing and inspection equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in the Statement of Special Inspections attached to this Section, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected Work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and authorities' having jurisdiction reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

**SECTION 014200
REFERENCES****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- C. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- D. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- E. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- F. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- G. "Provide": Furnish and install, complete and ready for the intended use.
- H. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
 - 1. ICC - International Code Council; www.iccsafe.org.
 - 2. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up-to-date as of the date of the Contract Documents.
1. EPA - Environmental Protection Agency; www.epa.gov.
 2. FG - Federal Government Publications; www.gpo.gov.
 3. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 4. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 015000
TEMPORARY FACILITIES AND CONTROLS****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

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

1.4 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.6 PROJECT CONDITIONS

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

PART 2 PRODUCTS**2.1 TEMPORARY FACILITIES**

- A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

2.2 EQUIPMENT

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

PART 3 EXECUTION**3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead unless otherwise indicated.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
 - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary offsite parking areas for construction personnel.
- D. Storage and Staging: Provide temporary offsite area for storage and staging needs.
- E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 3. Maintain and touch up signs so they are legible at all times.
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- I. Temporary Elevator Use: Use of elevators is not permitted .
- J. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 311000 "Site Clearing."
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.
- G. Site Enclosure Fence: Before construction operations begin , furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations .
 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

- J. Temporary Egress: Provide temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction. Provide signage directing occupants to temporary egress.
- K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 - 4. Remove standing water from decks.
 - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - 2. Keep interior spaces reasonably clean and protected from water damage.
 - 3. Periodically collect and remove waste containing cellulose or other organic matter.
 - 4. Discard or replace water-damaged material.
 - 5. Do not install material that is wet.
 - 6. Discard and replace stored or installed material that begins to grow mold.
 - 7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 - 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 - 2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
 - 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. All temporary construction partitions and enclosures shall be maintained to professional standards as determined by Owner and Architect. Contractor to remain diligent in keeping jobsite appearances clean and neat in a professional manner. Architect and Owner reserve the right to stop work until temporary partitions and enclosures are corrected or maintained as so deemed by Architect and Owner.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION

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**SECTION 016000
PRODUCT REQUIREMENTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
 - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.
- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
 - 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
 - 2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
 - 3. Cost difference shall be clearly indicated as well in submission of comparable product.
- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."
- F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with the manufacturer's written instructions.
- B. Delivery and Handling
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.

1.5 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
 - 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."
 2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."
 3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
 4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
 - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
 5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
 6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
 7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in

"Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.
 6. Cost differences if any shall be clearly shown at time of submission for consideration.
- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
 1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 017300
EXECUTION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
 - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 REFERENCE STANDARDS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Certified Surveys: Submit two copies signed by land surveyor .
- B. Certificates: Submit certificate signed by , certifying that location and elevation of improvements comply with requirements.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Comply with the requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices:
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 4. Contractor is to perform all patch work from corner to corner or joint to joint if required for adequate blending methods.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.
- K. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

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

1. Cut in-place construction to provide for installation of other components or performance of other construction and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically

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

- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- D. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

**SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Section 042000 "Unit Masonry" for disposal requirements for masonry waste.
 - 2. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.2 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS**1.4 ACTION SUBMITTALS**

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.6 QUALITY ASSURANCE

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

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

PART 2 PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total nonhazardous solid waste generated by the Work. Facilitate recycling and salvage of materials.

PART 3 EXECUTION**3.1 PLAN IMPLEMENTATION**

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Beyond salvage identified on the Drawings, the extent of recycling and salvage activity is at the Contractor's discretion.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 - 1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 - 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

- A. Comply with requirements in Section 024119 "Selective Demolition" for salvaging demolition waste.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site.
- C. Salvaged Items for Owner's Use:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area off-site.
 - 5. Protect items from damage during transport and storage.

3.3 DISPOSAL OF WASTE

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

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

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**SECTION 017700
CLOSEOUT PROCEDURES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
 - 2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 4. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest-control inspection.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit testing, adjusting, and balancing records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, listed by room or space number.
 - 2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
 - 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 - 4. Submit list of incomplete items in the following format:
 - a. PDF Electronic File: Architect will return annotated file.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Architect .
- D. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 PRODUCTS**2.1 MATERIALS**

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

PART 3 EXECUTION**3.1 FINAL CLEANING**

- A. Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities including landscape development areas of rubbish, waste material, litter, and other foreign substances. Grassed areas intended for mowing shall be left mower ready and cleared of loose rocks, dirt clods and other objects left over from construction progress.
 - b. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - d. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
 - e. Vacuum and mop concrete.
 - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - h. Remove labels that are not permanent.
 - i. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - k. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - l. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - m. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
 - n. Clean strainers.
 - o. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - p. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - q. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction.

END OF SECTION

**SECTION 017823
OPERATION AND MAINTENANCE DATA****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.

1.2 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 REFERENCE STANDARDS

- A. ASHRAE Guideline 4 - Preparation of Operations and Maintenance Documentation for HVAC&R Systems; 2019.

1.4 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit twodrinter copies along with a pdf version to the Architect at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory Architect will return onecop of draft and mark whether general scope and content of manual are acceptable.
- C. Final Manual Submittal: Submit 2 copies of each manual in final form along with a pdf version 15 days before final completion. Architect will return copy with comments (if required) within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 2 copies of each corrected manual along with a pdf version within 15 days of receipt of Architect's comments.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

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

- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - 2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.7 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.

5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

1.8 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- D. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.

9. Special operating instructions and procedures.
- E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.9 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.
- C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
 1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.10 PRODUCT MAINTENANCE MANUALS

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

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**SECTION 017839
PROJECT RECORD DOCUMENTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files of scanned Record Prints and three set(s) of file prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files and of Project's Specifications, including addenda and Contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.

- i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 1. Format: Annotated PDF electronic file with comment function enabled.
 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect for resolution.
 4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.
- B. Format: Submit record specifications as annotated PDF electronic file.

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders , Record Specifications, and Record Drawings where applicable.
- C. Format: Submit Record Product Data as annotated PDF electronic file .
 - 1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 PRODUCTS (NOT USED)**PART 3 EXECUTION (NOT USED)****END OF SECTION**

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**SECTION 017900
DEMONSTRATION AND TRAINING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared in same PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.

- f. Procedures for routine maintenance.
- g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner , through Architect, with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Cleanup: Collect used and leftover educational materials and remove from Project site . Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.
 - 1. Submit video recordings on CD-ROM or thumb drive .
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
- E. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 PRODUCTS

PART 3 EXECUTION

END OF SECTION

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DIVISION 02
EXISTING CONDITIONS

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**SECTION 024119
SELECTIVE DEMOLITION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Demolition and removal of selected site elements.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 REFERENCE STANDARDS

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

1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Predemolition Photographs or Video: Submit before Work begins.
- C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.6 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before selective demolition, Owner will remove the items as noted on the Drawings
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
- E. Storage or sale of removed items or materials on-site is not permitted.

- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.9 WARRANTY

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

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes and templates.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.

- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
- 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 - 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 5. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. 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.
- C. Existing Items to Remain:
1. Protect construction indicated to remain against damage and soiling during selective demolition.
 2. 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. When required for new work or warranted work to be completed, existing items to remain are to be removed and reinstalled upon the completion of new construction. Service disruptions to be coordinated a minimum of 72 hours of disruption, if disruption is to be longer than four hours or impact normal building operation.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

DIVISION 03
CONCRETE

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SECTION 031000: CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 01 Sections
- B. Section 032000 - Concrete Reinforcing.
- C. Section 033000 - Cast-in-Place Concrete.

1.2 REFERENCES

ACI 117 – Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 301 – Standard Specifications for Structural Concrete.

ACI 318 – Building Code Requirements for Structural Concrete.

ACI 347 – Guide to Formwork for Concrete.

ASTM D1751 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.

ASTM E154 – Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

ASTM E1643 – Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

ASTM E1745 – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

ASTM E1993 – Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

ASTM F1249 – Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.

1.3 DEFINITIONS

- A. Architectural Concrete: All concrete members exposed to public view are classified as Architectural Concrete and shall comply with the Architectural Concrete provisions in this specification and ACI 301.

1.4 SUBMITTALS

- A. Submit locations of construction joints in framed construction for approval.

- B. Submit manufacturer's data for:
 - 1. Vapor Retarder
 - 2. Expansion/Isolation Joint Filler.
 - 3. Waterstops.

1.5 DESIGN OF FORMWORK

- A. Design of formwork, shoring, and reshoring and its removal is the Contractor's responsibility.
- B. Design of formwork, shoring, and reshoring shall conform to ACI 117, ACI 301, ACI 318, and ACI 347.
- C. Design formwork in a manner such that existing or new construction is not overloaded.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Form Material: Wood, plywood, metal, fiberglass or a combination of these, with sufficient strength to prevent distortion.
- B. Form Definitions
 - 1. Standard Forms: No form-facing material required. Standard forms are acceptable everywhere except for Architectural Concrete elements.
 - 2. Architectural Concrete Forms: Form-facing material shall be plywood, tempered concrete-form-grade hardboard, metal (unrusted) or plastic that will produce a smooth, uniform texture on the concrete. Do not use form-facing material with raised grain, torn edges, worn edges, patches, dents, or other defects that will impair the texture of the exposed concrete surfaces. Intent is that when the forms are removed, the exposed concrete surfaces will be free from all blemishes. Architectural concrete forms are required for all concrete elements indicated as Architectural Concrete.

2.2 FORMWORK ACCESSORIES

- A. Formwork Accessories: Commercially manufactured products, including ties and hangers. Do not use nonfabricated wire form ties.

2.3 FORM RELEASE AGENT

- A. Form release agent shall not bond with, stain, nor adversely affect concrete surfaces.

2.4 VAPOR RETARDER

- A. Vapor Retarder
 - 1. Polyethylene sheet, not less than 10 mils thick, complying with ASTM E1745, Class A, B, and C.
 - 2. Maximum Permeance: ASTM E96: 0.04 perms (US).
 - 3. Seam Tape: High Density Polyethylene Tape with pressure sensitive adhesive; minimum width of 4 inches.

4. Pipe Boots: Construct pipe boots from vapor barrier material and seam tape in accordance with manufacturer's instructions.

2.5 EXPANSION / ISOLATION JOINT FILLER

- A. Expansion / Isolation Joint Filler: ASTM D1751, asphalt impregnated premolded fiberboard, 3/8-inch thick by full thickness of slab or joint, unless indicated otherwise in the Structural Drawings.

2.6 CONSTRUCTION JOINTS

- A. Slabs On Ground: Steel plate dowel (1/4" thick) such as manufactured by PNA Construction Technologies, Inc., Greenstreak Group, Inc., or approved equal.
 1. Plate Thickness: 1/4-inch thick for slabs up to 6 inches in thickness; 3/8-inch for slabs over 6 inches and up to 8 inches in thickness; 3/4-inch thick for slabs over 8 inches in thickness and up to 12 inches in thickness.

2.7 WATERSTOPS

- A. Waterstops at construction joints and contraction joints indicated in the Structural Drawings shall be sized to suit the joints.
- B. Waterstops: Preformed, non-expansive, plastic adhesive waterstops such as Synko-Flex, manufactured by Henry Company, or approved equal.

PART 3 EXECUTION

3.1 GENERAL

- A. Erect formwork in accordance with ACI 301 and ACI 347.
- B. Finished work shall comply with tolerances of ACI 117.
- C. Provide 3/4-inch chamfer at all formed corners.

3.2 FOUNDATION ELEMENTS

- A. Sides of turned-down slabs shall be formed, and earth cuts as forms are not acceptable.
- C. Maintain minimum coverage of reinforcing steel as indicated in Structural Drawings.

3.3 VAPOR RETARDER

- A. Where indicated on Structural Drawings, place vapor retarder over granular subbase and behind expansion / isolation joints at walls. Place electrical conduits and ducts in granular subbase.
- B. Install vapor retarder in accordance with manufacturer's instructions and ASTM E1643.
 1. Lap vapor retarder six inches minimum at splices and seal with seam tape.
 2. Lap vapor retarder over footings and seal to walls.
 3. Seal all pipe penetrations with pipe boot.
 4. No penetration of vapor retarder is permitted except for reinforcing steel and permanent utilities.

5. Do not puncture vapor retarder; repair damaged areas by cutting patches of vapor retarder, overlapping damaged area 6 inches and taping all four sides.

- C. Install waterproof and vaporproof membrane in accordance with manufacturer's recommendations.

3.4 FORM PREPARATION

- A. Seal form joints to prevent leakage.
- B. Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed.
- C. Before reinforcement is placed, coat contact surfaces of form with form release agent in accordance with manufacturer's recommendations. Do not allow excess form release agent to accumulate in forms or come in contact with concrete surfaces against which fresh concrete will be placed.

3.5 INSERTS AND EMBEDMENT ITEMS

- A. Install and secure in position required inserts, embeds, hangers, sleeves, anchors, and nailers.
- B. Locate anchor bolts/rods in position in accordance with approved setting drawings and secure to prevent displacement during concrete placement.

3.6 PROVISIONS FOR OTHER TRADES

- A. Install openings in concrete formwork to accommodate work of other trades. Determine size and location of openings and recesses from trades requiring such items. Obtain approval from Structural Engineer for openings not shown in Structural Drawings.
- B. Accurately place and securely support items built into forms.

3.7 CONSTRUCTION JOINTS

- A. Slabs On Ground: Install steel plate dowels in accordance with manufacturer's recommendations. Place plate dowels at mid-depth of slab (+/-1/4-inch), unless noted otherwise in the Structural Drawings.
- B. Framed Construction:
 1. Install construction joints in accordance with ACI 318.
 2. Obtain Architect/Structural Engineer's prior approval for use and location of joints.
 3. Provide 1½-inch deep key-type construction joints at end of each placement for framed slabs, beams, walls, and footings. Bevel forms for easy removal.
 4. Remove loose particles and latency from surface prior to placing the next lift. Chip the surface to a depth sufficient to expose sound concrete.

3.8 WATERSTOPS

- A. Prepare surface and install strip applied waterstops in accordance with manufacturer's recommendations.

3.9 FORMWORK REMOVAL

- A. Remove formwork carefully in such manner and at such time as to ensure complete safety of structure. Do not remove formwork, shoring, or reshoring until members have acquired sufficient strength to support their weight and the load thereon safely.
- B. For conventionally reinforced framed slabs, formwork shall remain in place for a minimum of 5 days after concrete placement.
- C. For Architectural Concrete elements, remove forms as early as permissible and in such a manner as to not damage exposed surfaces.

3.10 FINISHES OF FORMED SURFACES

- A. Standard Form Finish: Patch tie holes and defects. Chip or rub off fins exceeding $\frac{1}{4}$ inch in height. Leave surface with the texture imparted by the forms.
- B. Architectural Concrete Finish: Patch tie holes and defects. Remove all fins completely. Produce finish on newly hardened concrete no later than the day following formwork removal. Wet the surface and rub it with carborundum or other abrasive until uniform color and texture are produced. Use no cement grout other than cement paste drawn from the concrete itself by the rubbing process.

END OF SECTION

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SECTION 032000: CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 1 Sections
- B. Section 031000 – Concrete Forming and Accessories.
- D. Section 033000 – Cast-in-Place Concrete.

1.2 REFERENCES

ACI 117 – Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 301 – Standard Specifications for Structural Concrete.

ACI 315 – Details and Detailing of Concrete Reinforcement.

ACI 318 – Building Code Requirements for Structural Concrete.

ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete Reinforcement.

ASTM A615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

ASTM A706 – Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.

AWS D1.4 – Structural Weld Code - Reinforcing Steel.

AWS D12.1 – Recommended Practices for Welding Reinforcing Steel Metal Inserts, and Connections in Reinforced Concrete Construction.

CRSI – Manual of Standard Practice.

1.3 SUBMITTALS

- A. Refer to Structural Quality Assurance Plan in the Structural Drawings for additional submittal requirements.
- B. Shop Drawings:
 - 1. Notify Structural Engineer prior to detailing reinforcing steel shop drawings.
 - 2. Indicate size, spacing, location and quantities of reinforcing steel and wire fabric, bending and cutting schedules, splice lengths, stirrup spacing, supporting and spacing devices. Detail reinforcing steel in accordance with ACI 315 and CRSI Standards.
 - 3. Written description of reinforcement without adequate sections, elevations, and details is not acceptable.

4. Reproduction of Structural Drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor.

- C. Submit manufacturer's data for tension and compression splicers.

1.4 QUALITY ASSURANCE

- A. Refer to the Structural Quality Assurance Plan in the Structural Drawings.

1.5 STORAGE AND PROTECTING

- A. Store reinforcing steel above ground so that it remains clean. Maintain steel surfaces free from materials and coatings that might impair bond.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Deformed Reinforcing Steel: ASTM A615, refer to Structural Drawings for grade (Grade 60 minimum).
- B. Welded Steel Wire Reinforcement: ASTM A1064.

2.2 ACCESSORY MATERIALS

- A. Annealed Steel Tie Wire: 16½ gage minimum.
- B. Bar Supports: Plastic-tipped steel Class I bar supports conforming to CRSI Specifications. Concrete brick may be used to support reinforcement to obtain proper clearance from earth.

2.3 SPLICERS

- A. Tension Splicers: Capable of developing 125% of the reinforcing steel ASTM specified minimum yield strength.
- B. Compression Splicers: Mechanical type such that the compression stress is transmitted by end bearing held in concentric contact.

2.4 DOWEL ADHESIVE

- A. Adhesive conforming to Simpson AT-XP (IAPMO-UES ER-263), Simpson SET-XP (ICC-ES ESR-2508), DeWalt/Powers Pure110+ (ICC-ES ESR-3298), DeWalt/Powers DeWalt AC200+ Adhesive (ICC-ES ESR-4027), Hilti HIT-HY 200 Safe Set Fast Cure Adhesive (ICC-ES ESR-3187), Hilti HIT-RE 500 V3 SAFE Set Adhesive (ICC-ES ESR-3814). Minimum Embedment = 12 times anchor diameter, UNO.

PART 3 EXECUTION

3.1 FABRICATION

- A. Fabricate reinforcing steel in accordance with ACI 318 and CRSI standards.

- B. Bend bars cold. Do not heat or flame cut bars. No field bending of bars partially embedded in concrete is permitted, unless specifically approved Structural Engineer and checked by Testing and Inspection Agency for cracks.
- C. Weld only as indicated. Perform welding in accordance with AWS D1.4 and AWS D12.1.
- D. Tag reinforcing steel for easy identification.

3.2 INSTALLATION

- A. Before placing concrete, clean reinforcement of foreign particles and coatings.
- B. Place, support, and secure reinforcement against displacement in accordance with ACI 318 and CRSI standards. Do not deviate from alignment or measurement.
- C. Place concrete beam reinforcement support parallel to main reinforcement.
- D. Locate welded wire reinforcement in the top third of slabs. Overlap mesh one lap plus two inches at side and end joints.
- E. Furnish and install dowels or mechanical splices at intersections of walls, columns and piers to permit continuous reinforcement or development lengths at such intersections.
- F. Maintain cover and tolerances in accordance with ACI and CRSI Specifications, unless indicated otherwise on Structural Drawings.
- G. Reinforcement shall be adequately supported in the forms to prevent displacement by concrete placement or workers. Bundled bars should be tied or otherwise fastened together to maintain their position, whether vertical or horizontal.
- H. Wet-setting of reinforcement in concrete is not permitted.

3.3 SPLICES

- A. Do not splice reinforcement except as indicated on Structural Drawings.
- B. Tension couplers may be used and installed in accordance with manufacturer's recommendations.

3.4 DOWELS IN EXISTING CONCRETE

- A. Install dowels and dowel adhesive in accordance with manufacturer's recommendations at locations noted by EOR.
- B. Minimum embedment length into the existing concrete shall be 12 bar diameters, unless noted otherwise.

END OF SECTION

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SECTION 033000: CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 1 Sections
- B. Section 031000 – Concrete Forming and Accessories.
- C. Section 032000 – Concrete Reinforcement.

1.2 REFERENCES

- A. The publications listed below form a part of this specification. The publications are referenced to within the text by the basic designation only.

ACI 117 – Standard Specifications for Tolerances for Concrete Construction and Materials.

ACI 301 – Specifications for Structural Concrete.

ACI 305.1 – Specification for Hot Weather Concreting.

ACI 306.1 – Standard Specification for Cold Weather Concreting.

ACI 308.1 – Specification for Curing Concrete.

ACI 311.6 – Specification for Testing Ready Mixed Concrete

ACI 311.7 – Specification for Inspection of Concrete Construction

ACI 318 – Building Code Requirements for Structural Concrete.

ASTM C31 – Standard Practice for Making and Curing Concrete Test Specimens in the Field.

ASTM C33 – Standard Specification for Concrete Aggregates.

ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

ASTM C94 – Standard Specification for Ready-Mixed Concrete.

ASTM C138 – Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.

ASTM C150 – Standard Specification for Portland Cement.

ASTM C172 – Standard Practice for Sampling Freshly Mixed Concrete.

ASTM C173 – Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.

ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.

ASTM C309 – Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

ASTM C469 – Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression.

ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.

ASTM C595 – Standard Specification for Blended Hydraulic Cements

ASTM C618 – Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

ASTM C920 – Standard Specification for Elastomeric Joint Sealants

ASTM D994 – Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)

ASTM E1155 – Standard Test Method for Determining F_F Floor Flatness and F_L Floor Levelness Numbers.

1.3 SUBMITTALS

- A. Refer to Structural Quality Assurance Plan in the Structural Drawings for additional submittal requirements.
- B. Submit the concrete mix designs. Include the following:
 - 1. Documentation of mix design proportions complying with ACI 301.
 - 2. Type and quantities of materials including admixtures
 - 3. Slump
 - 4. Air content
 - 5. Water/cement ratio
 - 6. Fresh unit weight
 - 7. Aggregates sieve analysis
 - 8. Design compressive strength
 - 9. Location of placement in structure
 - 10. Method of placement
 - 11. Method of concrete curing
 - 12. Method of protection of concrete
 - 13. Seven-day and 28-day compressive strengths
- C. Mix design submittals not conforming to the above will be rejected.

1.4 QUALITY ASSURANCE

- A. The ready-mixed concrete plant shall be certified for conformance with the requirements of the National Ready Mix Concrete Association.
- B. Refer to the Structural Quality Assurance Plan in the Structural Drawings.

- C. The procedures used in sampling shall include the use of every precaution that will assist in obtaining samples that are truly representative of the nature and condition of concrete sampled.
- D. Concrete sampling shall be performed as the concrete is delivered from the mixer to the conveying vehicle used to transport the concrete to the forms.
- E. Sample the concrete by collecting two or more portions taken at regularly spaced intervals during discharge of the middle portion of the batch. The elapsed time shall not exceed 15 min. between obtaining the first and final portions of the composite sample. Take the samples so obtained within the time limit of 15 min. and combine them into one composite sample for test purposes. In any case do not obtain samples until after all of the water and any admixtures have been added to the mixer. Do not obtain samples from the very first or last portions of the batch discharge. Sample by repeatedly passing a receptacle through the entire discharge stream or by completely diverting the discharge into a sample container. Regulate the rate of discharge of the batch by the rate of revolution of the drum and not by the size of the gate opening.
- F. Start tests for slump, temperature, and air content within 5 min after obtaining the final portion of the composite sample and complete these tests expeditiously. Start molding specimens for strength tests within 15 min. after fabricating the composite sample. Expeditiously obtain and use the sample and protect the sample from the sun, wind, and other sources of rapid evaporation, and from contamination.

PART 2 PRODUCTS

2.1 CONCRETE MIX DESIGN

- A. Establish concrete mix design proportions in accordance with Article 4.2.3 of ACI 301.
- B. Concrete Strength: See Structural Notes in Structural Drawings.
- C. Slump
 - 1. Design concrete with a slump between four and ten inches.
 - 2. If a slump greater than five inches is desired, use a water reducer.
- D. Water/Cementitious Materials Ratio (w/cm): See Structural Notes in Structural Drawings.
- E. Entrained Air Content: See Structural Notes in Structural Drawings.
- F. Fresh Unit Weight
 - 1. Normal weight concrete: Fresh unit weight of 137 to 148 pcf.

2.2 MATERIALS

- A. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
- B. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
- C. Obtain aggregate from single source.
- D. Obtain each type of admixture from single source from single manufacturer.

- E. Materials designated by specific manufacturer's trade names are approved, subject to compliance with the quality and performance indicated by the manufacturer. Instructions and recommendations, published by the manufacturer of such materials are included in and are a part of these Specifications.

2.3 CEMENT

- A. Cement: Type I Portland Cement – ASTM C150.
- B. Cement: Type IL Portland Limestone Cement – ASTM C595.

2.4 FLY ASH

- A. Fly Ash: Class C or Class F – ASTM C618. When fly ash is used, the quantity shall be a minimum amount of 15 percent and a maximum amount of 25 percent by weight of the total cementitious materials, unless otherwise specified.

2.5 AGGREGATE

- A. Fine Aggregate: Fine aggregate complying with ASTM C33. Natural sand is preferred to manufactured sand.
- B. Fine Aggregate in slabs: The gradation of fine aggregate in concrete mix designs for floor slabs shall meet the requirements in the Table below:

Sieve Designation	Percent Passing	
	Normalweight Aggregate	Lightweight Aggregate
3/8 in.	100	100
No. 4	85 to 100	85 to 100
No. 8	80 to 90	–
No. 16	50 to 75	40 to 80
No. 30	30 to 50	30 to 65
No. 50	10 to 20	10 to 35
No. 100	2 to 5	5 to 20

- C. For normalweight concrete, the weight of fine aggregate in the mix proportion shall not exceed 50 percent of the total weight of fine plus coarse aggregate.
- D. Coarse Aggregate: Washed gravel or crushed stone conforming to ASTM C33. When a single size or combinations of two or more sizes of coarse aggregates are used, the final grading shall conform to the grading requirements of ASTM C33, unless otherwise specified or permitted.
1. Unless governed by the maximum size as specified in Section 2 below, the largest practical-size coarse aggregate shall be used. Except for topping slabs 3-in. thick or less the largest size of coarse aggregate in normalweight concrete shall be a nominal $\frac{3}{4}$ -in. and the largest size of coarse aggregate in lightweight concrete shall be a nominal $\frac{1}{2}$ -in. For topping slabs that are 3-in. thick or less the maximum size of coarse aggregate shall be $\frac{3}{8}$ inch.

2. The nominal maximum size of coarse aggregate shall not exceed three-fourths of the minimum clear spacing between reinforcing bars, one-fifth of the narrowest dimension between sides of forms, or one-third of the thickness of slabs or toppings.

2.6 WATER

- A. Water: Potable water

2.7 AIR ENTRAINING AGENT

- A. Air Entraining Agent: Air entraining agent shall conform with ASTM C260. For normalweight concrete air entrainment shall not be used in flatwork to receive a hard steel-troweled finish.

2.8 WATER REDUCER

- A. Water Reducer: Water reducing agent shall conform with ASTM C494.

2.9 ACCELERATORS

- A. Accelerators: Non-chloride accelerators shall conform with ASTM C494.

2.10 RETARDERS

- A. Retarders: Retarders shall conform with ASTM C494.

2.11 CHLORIDE

- A. Chlorides: Chlorides of any form shall not be used in concrete.

2.12 CURING COMPOUND

- A. Curing Compound: A water-based, VOC-compliant concrete curing agent, hardener, and dustproofers that complies with ASTM C309. The curing agent shall be residue-free and contains no wax, resin, or other materials that would inhibit the bond of subsequent coatings and/or treatments. An example of a curing compound that meets this specification is Med-Cure by W.R. Meadows. Coordinate curing compound with flooring supplier to ensure compatibility.

PART 3 EXECUTION

3.1 GENERAL

- A. Prepare place of deposit, mix, convey, and place in accordance with ACI 301 and ACI 304. If concrete is pumped, use a 5-inch minimum hose diameter, except for placement of metal pan stair treads where a 2-inch minimum hose is permitted.
- B. Wet forms before placing concrete.
- C. Deposit concrete continuously and as near as practical to final position.
- D. Deposit concrete in one layer or in multiple layers. Do not place fresh concrete against concrete that would result in cold joints.

- E. Do no flowing of concrete with vibrators.
- F. Do not place concrete over columns or walls until concrete in columns and walls has reached final setting.
- G. For cast-in-place floor systems place concrete for beams, girders, brackets, column capitals, haunches, and drop panels at same time as concrete for adjacent slabs.
- H. Place and finish concrete members to comply with tolerances in ACI 117.
- I. Do not use aluminum equipment in placing and finishing concrete.
- J. Normalweight concrete for slabs to receive a hard-troweled finish shall not contain an air-entraining admixture or have a total air content greater than 3 percent.
- K. Wet-setting of dowel reinforcement, steel embeds, DBA anchors, anchor bolts, etc. into previously placed concrete is not permitted. All required inserts, embeds, dowels, hangers, sleeves, anchor bolts/rods, anchors, and nailers shall be installed and secured in position before concrete placement.

3.2 SLABS-ON-GROUND

- A. Place concrete for slabs-on-ground on properly prepared granular subbase with vapor barrier.
- B. Place thickened slabs for partitions integral with floor slabs.

3.3 WATER REDUCERS

- A. Water reducers are to be added at dosage recommended by the manufacturer. The slump of the concrete shall be one to four inches at the time the water reducers are added. Do not permit fresh concrete containing superplasticizers to come in contact with fresh concrete not containing superplasticizers.

3.4 ADDITION OF WATER AT JOB SITE

- A. Water may be added at the jobsite if neither the maximum permissible water/cement ratio nor the maximum slump is exceeded. All concrete delivery trucks will have actual batch weight tickets available that clearly indicate the quantity of water that may be added at the jobsite that will not exceed the maximum water/cement ratio.

3.5 TIME LIMIT

- A. Deposit concrete within one and one-half hours after batching.

3.6 VIBRATION

- A. Consolidate concrete by vibration. Consolidate concrete around reinforcement, embedded items, and into corners of forms. Use immersion-type vibrators with nonmetallic heads for consolidating concrete around epoxy-coated or zinc and epoxy dual-coated reinforcing bars.
- B. Do not use vibrators to move concrete in a manner that will result in segregation.

- C. Spacing of immersion vibrator insertions shall not exceed 1-1/2 times the vibrator's radius of action in concrete being consolidated.

3.7 WEATHER PROVISIONS

- A. Do not place concrete while rain, sleet, or snow is falling unless protection is provided. Do not allow precipitation to increase mixing water or to damage concrete surface.
- B. Perform cold weather concreting in accordance with ACI 306. Concrete temperatures at delivery shall meet the requirements of Section 4 in ACI 301. Do not place concrete in contact with surfaces less than 35°F. Unless otherwise specified, this requirement shall not apply to reinforcing steel.
- C. Perform hot weather concreting in accordance with ACI 305. Unless otherwise specified, concrete temperature as placed shall meet the requirements of Section 4 of ACI 301. If temperature of reinforcement, embedments, or forms is greater than 120°F, use a fine mist of water to moisten and cool hot surfaces. Remove standing water before placing concrete.
- D. Protect concrete from drying and excessive temperature for the first seven days. Protect fresh concrete from wind.

3.8 CONTRACTION JOINTS

- A. Obtain Architect/Structural Engineer's approval for location of contraction joints. Do not use contraction joints in framed floors or composite slabs, unless noted in Structural Drawings.
- B. Unless noted otherwise in the architectural or structural drawings, provide contraction joints in slabs-on-ground to form a regular grid with a maximum spacing as noted in the Structural Drawings. The long dimension of the grid shall not exceed 1.5 times the short dimension of the grid. Contraction joints may be saw cut if cut within 24 hours after placement of concrete. Saw cuts shall be a depth equal to one-fourth the slab thickness by one-eighth inch wide. Alternately, contraction joints may be provided by preformed plastic strip inserts.
- C. Provide contraction joints in concrete walls at a maximum spacing of 20-ft. centers, or as noted in the Structural Drawings; coordinate location with Architect. Contraction joints shall be formed as a V-groove on both faces of the wall, 3/4-inch minimum depth.

3.9 EXPANSION JOINTS IN CONCRETE WALLS

- A. Cantilevered and gravity concrete walls shall have a 1/2-in. expansion joint at a spacing not to exceed 60-ft. on center.
- B. The expansion joint shall contain a waterstop and be filled with premolded joint filler.
- C. The expansion joint in the wall shall not continue through the footing.

3.10 CONSTRUCTION JOINTS

- A. Obtain Architect/Structural Engineer's approval for location of construction joints.
- B. Remove laitance and thoroughly clean and dampen construction joints before placement of fresh concrete.

- C. Unless specified in the drawings, locate and detail construction joints to following requirements:
 - 1. Locate construction joints within middle third of spans of slabs, beams, and girders. When a beam intersects a girder within this region, offset joint in girder a distance equal to or greater than twice width of beam;
 - 2. Locate joints in walls and columns at underside of slabs, beams, or girders and at tops of footings or slabs; and
 - 3. Make joints perpendicular to main reinforcement.
- D. Provide keyways where indicated in the Construction Documents. Unless otherwise specified, longitudinal keyways indicated in Contract Documents shall be a minimum of 1-1/2 in. deep in joints in walls and between walls and slabs or footings.
- E. Provide construction, expansion, and contraction joints where indicated in Contract Documents. Submit for acceptance details and locations of construction, expansion, and contraction joints differing from those indicated in Contract Documents.
- F. Design formwork to accommodate waterstop materials. Locate waterstop in construction joints where indicated in Contract Documents. Use waterstop with a maximum practical length to create minimum number of splices.
- G. Use an approved bonding agent applied in accordance with the manufacturer's requirements or portland-cement grout of the same proportions as the mortar in the concrete; or roughen the surface in an approved manner that exposes coarse aggregate and does not leave laitance, loosened aggregate particles, or damaged concrete at surface.

3.11 CONCRETE FINISHES

- A. Finish Concrete in accordance with ACI 301.
- B. After form removal, give each formed surface the specified finish. If the Architectural and Structural drawings do not specify a finish, provide a SF-1.0 finish on concrete surfaces not exposed to view and a SF-2.0 finish on concrete surfaces exposed to view.
 - Surface Finish 1.0 (SF1.0)
 - 1. No formwork facing material is specified
 - 2. Patch voids larger than 1-1/2 in. wide or 1/2 in. deep
 - 3. Remove projections larger than 1 in.
 - 4. Tie holes need not be patched
 - 5. Surface tolerance Class D as specified in ACI 117
 - 6. Mockup not required
 - Surface Finish 2.0 (SF2.0)
 - 1. Patch voids larger than 3/4 in. wide or 1/2 in. deep
 - 2. Remove projections larger than 1/4 in.
 - 3. Patch tie holes
 - 5. Surface tolerance Class B as specified in ACI 117
 - 6. Unless otherwise specified, provide mockup of concrete surface appearance and texture
- C. If a Rubbed Finish is specified in the Architectural or Structural drawings, produce the smooth-rubbed finish no later than the day following formwork removal. Wet the surface and rub it with an abrasive such as carborundum brick until uniform color and texture are produced. If insufficient cement paste can be drawn from the concrete itself by the rubbing process, use a grout made with cementitious materials from the same sources as used for in-place concrete.

- D. If a finish is not otherwise specified for the unformed surfaces the following finishes shall apply (Refer to Section 5 of ACI 301 for requirements of each finish):
1. Scratch finish—For surfaces intended to receive bonded cementitious or setting beds
 2. Float finish—For walks; steps; and for surfaces intended to receive waterproofing, roofing, insulation, or sand-bed terrazzo
 3. Trowel finish—For interior floors
 4. Broom finish—For parking slabs and exterior surfaces, including slabs, ramps, walkways, and steps, light broom finish for exterior balconies.
- C. Finish slabs to the following flatness and levelness tolerances:
1. F_F35/F_L25 minimum overall for composite of all measured values and F_F24/F_L15 minimum for any individual floor section.
 2. Slabs to receive wood flooring: F_F45/F_L30 minimum overall for composite of all measured values and F_F30/F_L20 minimum for any individual floor section.

3.12 CURING

- A. Begin curing procedures in accordance with Section 5 of ACI 301 immediately following the commencement of the finishing operation. If bleed water sheen is not visible on surface of concrete after strikeoff and initial bull floating, provide initial curing by means of fogging or application of evaporation retarder until final curing method is applied. Do not use fogging in cold weather concreting.
- B. After the initial curing outlined in A., apply the curing procedure as specified below. Apply curing in a manner that prevents marring, marking, or discoloration of finished surface. The curing methods below refer to ACI 301 (Specifications for Structural Concrete) and ACI 308.1 (Specification for Curing Concrete). The curing methods below are described in detail in these documents and the provisions of the curing method specified shall be adhered to. In addition, ACI 308 (Guide to External Curing of Concrete) may be used as a reference guide.
- C. Moist cure the unformed surface of all interior concrete slabs in accordance with ACI 301 and ACI 308 using either of the three methods below. The requirements for each of these curing methods can be found in Section 3 of ACI 308. Keep the concrete surface continually moist a minimum of 3 days. Do not allow the surface to dry or undergo cycles of drying and wetting.
1. Ponding
 2. Sprinkling
 3. Fogging
- D. If the concrete will be exposed with a polished or stained finish use curing water that is free of substances that will stain or discolor concrete. The staining ability of curing water can be evaluated by means of CRD-C 401.
- E. After the 3-day moist cure period, apply a membrane-forming curing compound in accordance with manufacturer's recommendations. The curing compound used must be compatible with all adhesives to be used on the concrete surface. Do not use a curing compound in areas to receive material that does not adhere to concrete cured with a curing compound.
- F. For formed surfaces, unless otherwise specified, if formwork is loosened or removed so that concrete surface is exposed to ambient air less than 7 days from concrete placement continue curing by either continuous fogging, ponding, continuous sprinkling, or a membrane-forming curing compound as described above and in ACI 301 and ACI 308.

- G. Maintain concrete temperature to prevent freezing of concrete and to ensure strength development. Unless otherwise specified, duration of thermal protection shall be at least 3 days.
- H. Maintain curing measures until the concrete has reached a minimum of 70 percent of the specified 28-day strength compressive strength, f_c' , but not less than 7 days.

3.13 CUTTING CONCRETE

- A. Obtain Architect/Structural Engineer's written approval prior to cutting concrete for installation of other work.

3.14 PATCHWORK AND REPAIRS

- A. Repair tie holes and other surface defects in formed finishes unless otherwise specified. Where the concrete surface will be textured by sandblasting or bush-hammering, repair surface defects before texturing.
- B. Notify Architect/Structural Engineer of any defective areas (other than tie holes) in concrete to be patched or repaired. Unless otherwise specified or permitted, repair surface defects by the following method. Outline repair area with a 1/2 in. deep saw cut and remove defective concrete down to sound concrete. Leave chipped edges perpendicular to the saw-cut surface or slightly undercut. Do not feather edges. Dampen the area to be patched plus 6 in. around the patch area perimeter. Prepare scrub coat mix using one-part portland cement and one-part sand by loose volume with water. Thoroughly brush scrub coat into the surface. When the scrub coat begins to lose water sheen, apply patching mortar (for concrete exposed to view, mortar shall match adjacent concrete color) and thoroughly consolidate mortar into place. Strike off mortar, finishing flush to the final surface. Leave the patch undisturbed for 1 hour before finishing. Keep the patch damp for 7 days.

END OF SECTION

DIVISION 04

MASONRY

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**SECTION 040110
MASONRY CLEANING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Cleaning exterior brick masonry
- B. Related Sections:
 - 1. Section 040120.63 - Brick Masonry Repair
 - 2. Section 040120.64 - Brick Masonry Repointing

1.2 REFERENCES

- A. Except as modified by Construction Documents, applicable portions of the latest editions of following reference documents shall govern the Work.
 - 1. Secretary of Interior's Standards for the Treatment of Historic Properties.

1.3 DEFINITIONS

- A. Very Low-Pressure Water: Less than 100 psi; 4 to 6 gpm
- B. Low-Pressure Water: 100 to 400 psi; 4 to 6 gpm
- C. Medium-Pressure Water: 400 to 800 psi; 4 to 6 gpm
- D. High-Pressure Water: 800 to 1200 psi; 4 to 6 gpm

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner's Representative.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for cleaning Work.
 - b. To avoid or minimize work in immediate vicinity of cleaning Work in progress.
 - c. To ensure that subsequent work will not adversely affect cleaned surfaces.
- B. Notify Architect/Engineer of conflicts between Specifications and cleaning material manufacturer's recommendations. Perform Work according to Specifications unless Architect/Engineer authorizes changes in writing.
- C. Pre-construction Meeting:
 - 1. Conduct meeting at Site.
 - 2. Review requirements for cleaning Work, including:
 - a. Construction schedule.
 - b. Availability of materials, cleaning personnel, equipment, and facilities needed to make progress and avoid delays.
 - c. Site use, access, staging, and set-up location limitations.
 - d. Sequencing of Work.
 - e. Cleaning procedures.
 - f. Testing and inspection requirements.
 - g. Temporary protection.
 - 3. Contractor's Site superintendent, Masonry Repair Subcontractor's foreman, Cleaning Subcontractor's foreman, Owner's Representative, and Architect/Engineer shall attend.
- D. Sequencing: Perform cleaning and repair Work in the following sequence:
 - 1. Perform masonry repairs and joint repointing as specified.
 - 2. Clean walls as specified.

1.5 REQUIRED SUBMITTALS

- A. Product Data: List of products proposed for use, with Manufacturer's product literature and application instructions.

1. Include Globally Harmonized System (GHS) Safety Data Sheets or, if not yet available, Material Safety Data Sheets for information only; safety restrictions are sole responsibility of Contractor.
- B. Samples for Verification: Before performing mock-ups, samples of cleaning chemicals.
- C. Cleaning System Descriptions: Modify specified requirements based on approved mock-ups and submit complete written descriptions of cleaning systems, including materials and procedures.
- D. Protection Plan: Written plan describing protection measures proposed for use on Project.
- E. Containment, Collection, and Disposal Plan: Written plan describing methods for containing, collecting, and disposing of runoff during cleaning operations.
- F. Cleaning Subcontractor Qualifications: Evidence that Subcontractor's existing company has minimum five years of continuous experience in use of specified cleaning system; list of at least five representative, successfully-completed projects of similar scope and size.

1.6 QUALITY ASSURANCE

- A. Cleaning Subcontractor Qualifications: Experienced firm that has successfully completed cleaning work similar in material, design, and extent to that indicated for the Project. Must have successful use of specified cleaning system in local area for minimum of five years.
 1. Employ trained foreman with a minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during the Work. Do not change foremen during the course of the Project except for reasons beyond the control of Subcontractor; inform Architect/Engineer in advance of any changes.
 2. Employ laborers with training and at least three years of experience with the specified cleaning system.
- B. Cleaning-System Manufacturer Qualifications: Firm regularly engaged in supplying cleaning system that has been used for similar applications with successful results; with technical representatives who are available for consultation and Site inspection and assistance at no additional cost to Owner.
- C. Mock-ups:
 1. Apply the following mock-ups at locations selected by Architect/Engineer to demonstrate procedures and effectiveness. Number of mock-ups and sizes as indicated.
 - a. Water mist cleaning system: four mock-up locations, each 25 sq feet.
 - b. If water mist cleaning system is not acceptable for the removal of general soiling, perform the following additional mock-ups:
 - 1) Detergent cleaning system at two mock-up locations, each 25 sq feet.
 - 2) One-part chemical cleaning system at two mock-up locations, each 25 sq feet.
 2. Prepare mock-ups on existing walls, at locations designated by Architect/Engineer and in presence of Architect/Engineer, under same weather conditions expected during Work. Provide access to mock-up locations.
 3. Test adjacent materials and other materials that may be affected by cleaning system, to determine if materials need to be protected. Test areas shall be small and in unobtrusive locations.
 4. Include protection systems and devices proposed for use to counteract adverse effects of cleaning system, in mock-up.
 5. Allow period of at least 14 days after mock-up preparation for evaluation of effectiveness of cleaning system and for negative reactions.
 6. If Owner's Representative and Architect/Engineer determine mock-up does not comply with requirements, modify mock-up or construct new mock-up until mock-up is approved. Modifications may include minor adjustments to application methods, dilutions, and dwell times of products within limits recommended by manufacturers.
 7. Approved mock-ups shall be maintained in an undisturbed condition throughout the Project as a basis for acceptance of completed work and may become part of completed Work if undisturbed at time of Substantial Completion.

8. Record locations and materials and methods used for mock-ups on drawings and in field reports for reference as Work proceeds.
9. Do not order materials or proceed with Work until mock-ups have been approval by Architect/Engineer and Owner's Representative.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such a manner as to prevent damage to materials or structure.
- B. Deliver materials to Site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components. Materials shall be clearly labeled with safety warnings.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original, undamaged containers in a secure location approved by Owner's Representative, within temperature range required by manufacturer. Assume full responsibility for protection and safekeeping of products stored on Site.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove materials that cannot be applied within stated shelf life from Site and replace with new materials.

1.8 PROJECT CONDITIONS

- A. No chemical cleaners containing any amount of hydrochloric (muriatic) acid, hydrofluoric acid, or ammonium bifluoride shall be used on the project.
- B. Verify existing dimensions and details prior to performing cleaning Work. Notify Architect/Engineer of conditions found to be different than those indicated in the Contract Documents. Architect/Engineer will review situation and inform Contractor of changes.
- C. Comply with limitations and restrictions for Site use, accessibility, and work hours imposed by codes, ordinances, rules, regulations, orders, laws, and other legal requirements of public authorities having jurisdiction, and by Owner.
 1. Comply with city, state, water department, and Federal regulations covering protection and waste water disposal.
- D. Environmental Limitations:
 1. Perform cleaning Work when air temperature is 50 degrees F or above and is predicted to remain so for at least seven days after completion of cleaning.
 2. Do not perform chemical cleaning when air temperature is greater than 90 degrees Fahrenheit.
 3. Do not perform cleaning Work when winds are sufficiently strong to spread cleaning materials to unprotected areas.
- E. Handle and use materials in strict accordance with safety requirements required by material manufacturer; GHS or Material Safety Data Sheets; and local, state, and federal rules and regulations. Maintain GHS or Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

1.9 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the performance of the Work.

1. Notify Architect/Engineer of conditions that may interfere with proper execution of the Work or jeopardize the performance of the Work, prior to proceeding with Work.
- B. Shore, support, or otherwise stabilize existing construction to remain prior to performing work; coordinate with other trades.

1.10 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
 1. Notify Architect/Engineer prior to proceeding with the Work of conditions that may interfere with, preclude proper execution of, or jeopardize the performance of the Work.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

- A. Water for Prewetting, Cleaning, and Rinsing:
 1. Clean, potable water, with iron content of less than two parts per million by weight.
 2. Notify Architect/Engineer and Owner's Representative of local water conditions that may make it unsuitable for cleaning, including presence of additives, water softeners, or other agents.
- B. Detergents, Surfactants, and Chelating Agents:
 1. Enviro Klean 2010 All Surface Cleaner manufactured by Prosoco, Inc.; Mix cleaner 1:10 with water by volume.
- C. One-Step Chemical Cleaner:
 1. Sure Klean Limestone & Masonry Afterwash manufactured by Prosoco, Inc.; Mix one part afterwash with two parts water by volume.
- D. Auxiliary Materials:
 1. pH Indicator: Litmus paper or other indicator capable of identifying neutral solutions.
 2. Plastic or non-corrosive metal water delivery system capable of applying a fine water mist evenly to all surfaces to be cleaned including undersides.
 3. Wood or plastic scrapers.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Cleaning Subcontractor and representatives of cleaning materials manufacturers and cleaning equipment suppliers, as applicable, for compliance with requirements and other conditions affecting performance of cleaning Work.
 1. Ensure that work done by other trades is complete and ready for cleaning Work.
 2. Verify that areas and conditions under which cleaning Work is to be performed permit proper and timely completion of Work.
 3. Notify Architect/Engineer in writing of conditions which may adversely affect cleaning Work and recommend corrections.
 4. Do not proceed with cleaning Work until adverse conditions have been corrected and reviewed by Architect/Engineer.
 5. Commencing cleaning Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Cleaning materials may include caustic or acidic chemicals, and may be subject to dispersion by wind and other weather features.
- B. Comply with cleaning-material manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
- C. Take precautions to ensure safety of people, including building users, passersby, and workmen, and protection of property, including adjacent building elements, landscaping, and motor

vehicles. Prevent cleaning solutions from coming into contact with pedestrians, motor vehicles, landscaping, buildings, site fixtures, and other surfaces that could be harmed by such contact.

- D. Protect the following elements:
 - 1. Surfaces being cleaned from cleaning materials not designated for use on those surfaces.
 - 2. Decorative features, such as bronze plaques, entrances, planters, signs, awnings, canopies, and lighting.
 - 3. Paving and sidewalks from staining or damage from cleaning operations.
 - 4. Adjacent building areas from mechanical damage due to scaffolding and other equipment.
 - 5. Windows, doors, joints, and other openings from infiltration of water or cleaning materials.
- E. Cover adjacent surfaces with materials that are proven to resist cleaners being used unless cleaners will not damage adjacent surfaces.
 - 1. Use covering materials that contain only waterproof, UV-resistant adhesives, such as:
 - a. Polyethylene sheets, at least 6 mils thick, taped around entire perimeter to provide watertight barrier, with backing as necessary to secure sheets against wind.
 - b. Approved strippable masking agent of sufficient thickness and applied without bubbles, holes, or defects, to adequately protect surface underneath.
 - 2. Apply masking agents in compliance with cleaning-material manufacturer's written instructions.
 - 3. Do not apply liquid masking agent to painted or porous surfaces.
 - 4. When no longer needed, promptly remove masking to prevent adhesive staining.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 EQUIPMENT

- A. Water Spray Equipment: With pressure gauges at compressor and spray nozzle, and volume meter at spray nozzle; ability to adjust pressure and volume at nozzle.
- B. For chemical cleaner, use low-pressure tank or pump recommended by chemical cleaner manufacturer, equipped with cone-shaped spray nozzle.

3.4 CLEANING, GENERAL

- A. Perform cleaning Work in compliance with applicable codes and regulations that govern Work, including city, state, water department, OSHA, and Federal regulations, and with requirements of material manufacturers.
- B. Use only cleaning products and methods indicated for wall material and location, and approved by mock-ups.
 - 1. Do not use wire brushes or scrapers.
- C. Perform cleaning Work in a systematic manner, proceeding from the top of the wall to the bottom in an access area and from one end of the elevation to the other.
- D. Perform cleaning Work to achieve uniform coverage of surfaces, including corners, moldings, and interstices, and to produce uniform effect without streaking or damaging wall surface.
- E. Keep wall wet below area being cleaned to prevent streaking from runoff.
- F. Perform cleaning Work in strict accordance with approved mock-up materials and procedures. Propose modifications to materials or methods as necessary to maintain level of cleaning in mock-ups or better. Perform mock-ups of proposed modifications; do not proceed with modifications unless approved in writing by Owner's Representative and Architect/Engineer.
- G. Prewetting and Rinsing Procedures:
 - 1. For prewetting and rinsing:
 - a. Prewet and rinse surfaces with warm water at minimum flow rate of 4 gallons per minute. Use warm water (not more than 120 degrees Fahrenheit, if approved by Architect, to improve effectiveness of cleaning and rinsing. Do not use higher pressures or lower flow rates unless approved by mock-ups.

- 1) Prewet surfaces at maximum pressure of not more than 100 pounds per square inch.
 - 2) Rinse surfaces at maximum pressure of not more than 100 pounds per square inch.
 - b. Use stainless steel nozzle with 40-degree fan spray, held at least 12 inches from surface.
 - c. Apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
2. On hot days, in direct sunlight, or as necessary, prewet multiple times so cleaning solution is applied to wet surface.
3. Rinse off cleaner solution and soil residue, moving upward from bottom to top of surface at each access location.
 - a. Continue rinsing until pH of surface has returned to neutral, 6.5 to 8.5.
 - b. Periodically test pH of rinse water running off surface with pH paper.
 - c. Repeat application of neutralizing afterwash if specified and rinsing as necessary until neutral pH is measured.
 - d. Measure pH of surface 48 hours after cleaning has been completed, when wall is dry. If pH is not neutral, rinse surface until neutral pH is achieved.
- H. Chemical Cleaner Application Methods: Apply chemical cleaner to surfaces in conformance with chemical cleaner manufacturer's written instructions and approved mock-ups.
 1. Use brush or spray application methods, at Contractor's option. Use brushes that are resistant to chemical cleaners being used.
 2. Spray apply at pressures below 50 pounds per square inch, or less as determined by mock-ups.
 3. Adjust pressure and volume of spray to ensure that cleaning methods do not damage wall material.
 4. Do not allow chemical cleaners to remain on surface for periods longer than those recommended by chemical-cleaner manufacturer or specified.
 5. Control wind drift of chemical cleaners.
- I. Collect and legally dispose of cleaning materials and debris.
 1. Neutralize alkaline and acid wastes for disposal off Owner's property.
 2. Dispose of runoff from cleaning operations by legal means, in manner that prevents soil erosion, undermining of pavement and foundations, damage to landscaping, and water penetration into building interior.

3.5 CLEANING BRICK MASONRY

- A. Removal of Plant Growth: Carefully and completely remove vines, moss, and plant growth from wall surfaces.
 1. Cut at roots and allow to dry for as long as possible before removal.
 2. Pry and scrape dry vines from wall surface with plastic or wood scrapers.
 3. Remove loose soil and debris from open joints.
- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to cleaning methods being used, including sealant, asphalt, and tar.
 1. Carefully remove heavy accumulations of material from wall surface with wood scraper. Do not scratch or chip wall surface.
- C. Cold-Water Mist and Soak:
 1. Apply fine water mist with spray rack, perforated hoses, or other means, to surface being cleaned.
 2. Apply water in cycles, with wetting cycles of approximately two hours, based on mock-ups and at least 30 minutes between wetting cycles.
 3. Continue water cycles as determined based on mock-ups until soil has loosened and surface encrustation has sufficiently loosened.
 4. Agitate loosened soiling with soft bristled brush.
 5. Rinse surface with low pressure water.

- D. Cleaning with Enviro Klean 2010 All Surface Cleaner:
 - 1. Prewet surface.
 - 2. Liberally apply cleaning solution to surface with soft, nylon-bristle brush, being careful to completely cover surface, including crevices.
 - 3. Allow to dwell for approximately 15 minutes. Keep surface moist by misting as necessary during dwell time.
 - 4. Immediately prior to rinsing, gently scrub surface with brush.
 - 5. Rinse thoroughly with low pressure water.
- E. Cleaning with Sure Klean Limestone and Masonry Afterwash:
 - 1. Dry-brush surface with soft-bristle brush.
 - 2. Prewet surface with very low pressure water.
 - 3. Apply cleaning solution with dense, natural-bristle brush.
 - 4. Allow to dwell for five minutes. Keep surface moist by misting as necessary during dwell time.
 - 5. Rinse thoroughly to return pH to neutral with very low pressure water.
 - 6. Test pH of surface after rinsing to confirm surface has returned to neutral.
 - 7. Repeat cleaning sequence as necessary until cleaning standard is achieved.
 - 8. Observe wall at least seven days after final rinsing.
 - 9. Repeat cleaning procedure if needed.

3.6 FIELD QUALITY CONTROL

- A. Architect/Engineer will monitor progress and quality of cleaning Work, possibly including:
 - 1. Observe completed Work and compare to approved mock-ups.
 - 2. Observe wall material with field microscope for damage.
 - 3. Test pH of runoff and wall surfaces.
 - 4. Test samples of cleaning products and mixed solutions for conformance with Specifications and approved mock-ups.
- B. Contactor Responsibilities:
 - 1. Test pH of runoff and wall surfaces to verify neutral pH.
 - 2. Provide access to Work for Architect/Engineer, Owner's Representative, and other consultants hired by Owner.
 - 3. Notify Architect/Engineer at least 48 hours in advance of when lift devices or scaffolding will be relocated. Do not relocate lift devices or scaffolding until Architect/Engineer has observed completed Work.
 - 4. Upon request, provide samples of cleaning products and mixed solutions to Architect/Engineer.
- C. Failure to use cleaning products and mix solutions as specified and approved are grounds for immediate termination of Contract Agreement.
- D. Remedy areas that do not satisfy requirements at no additional cost to Owner. Modify cleaning procedures as required and approved by Architect/Engineer.

3.7 CLEANING

- A. At the end of each workday:
 - 1. Clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
 - 2. Thoroughly rinse sidewalks to remove chemicals, dirt, pollutants, and other materials washed off building.
- B. After completing cleaning Work:
 - 1. Carefully remove protection materials, including tape, adhesive marks, and residue.
 - 2. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
 - 3. Repair surfaces stained, marred, or otherwise damaged during cleaning Work.

4. Return building surfaces, landscaping, and grounds to condition prior to cleaning Work, including painted and glass surfaces, to satisfaction of Architect/Engineer at no additional cost to Owner.
 5. Clean up debris and surplus materials and remove from Site.
- C. Waste Management:
1. Collect surplus cleaning materials that cannot be reused and deliver to recycling or disposal facility.
 2. Treat materials that cannot be reused as hazardous waste and dispose of in appropriate manner.

END OF SECTION

**SECTION 040120.63
BRICK MASONRY REPAIR****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes repairing brick masonry.

1.2 DEFINITIONS

- A. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

1.3 REFERENCE STANDARDS

- A. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale); 2023.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and locations of replacement bricks on the structure.
 - 2. Show provisions for expansion joints or other sealant joints.
- C. Samples: For each exposed product and for each color and texture specified.

1.6 SUBMITTALS

- A. Product Data: For each product listed in Part 2.
- B. Material Certification: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. The certification is also to include a statement that no coatings have been applied to the units during manufacture. Provide for each type and size of unit.
- C. Qualifications Data: For Contractor to perform work.
- D. Technical Data:
 - 1. For anchors as specified in Part 2.
 - 2. For replacement brick as specified in Part 2:
 - a. Manufacturer's Product Data: For units to match existing.
- E. Test Reports:
 - 1. For bricks, include size-variation data verifying that actual range of sizes falls within specified tolerances.
 - 2. Include material test reports from an independent testing laboratory showing the following test results:
 - a. Compressive strength per ASTM C67
 - b. 24 hour cold water absorption per ASTM C67
 - c. 5 hour boil absorption per ASTM C67
 - d. Saturation coefficient (c/b ratio) per ASTM C67
 - e. Initial rate of absorption (suction) per ASTM C67
 - f. Efflorescence per ASTM C67
- F. Samples for Selection:
 - 1. Face brick, in the form of straps of five or more bricks for three potential brick unit types selected by the Contractor. The five bricks shall show extremes of variation in color and texture. The Architect is to select sample brick for mock-up wall from provided samples. The Architect reserves the right to reject sample units and request additional samples until a satisfactory match is achieved.

2. Before erecting mock-ups, submit samples of the following:
 - a. Each type of specified masonry wall tie
 - b. Brick
 - c. Mortar

1.7 QUALITY ASSURANCE

- A. Brick Masonry Repair Specialist Qualifications: Engage an experienced brick masonry repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.
- B. Mockups: Prepare mockups of brick masonry repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
 1. Masonry Repair: Prepare sample areas for each type of masonry repair work performed. If not otherwise indicated, size each mockup not smaller than 24 inches by 36 inches in least dimension. Construct sample areas in locations in existing walls where directed by Architect. Demonstrate quality of materials, workmanship, and blending with existing work.

PART 2 PRODUCTS

2.1 MASONRY MATERIALS

- A. Face Brick: As required to complete brick masonry repair work.
 1. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork.
 - a. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
 - b. Sawcutting is permitted.
- B. Building Brick: ASTM C62, Grade SW; of same vertical dimension as face brick, for masonry work concealed from view.

2.2 MORTAR MATERIALS (REFER TO SECTION 040120.64 BRICK MASONRY REPOINTING)

2.3 ACCESSORY MATERIALS

- A. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 1. Previous effectiveness in performing the work involved.
 2. Minimal possibility of damaging exposed surfaces.
 3. Consistency of each application.
 4. Uniformity of the resulting overall appearance.
 5. Do not use products or tools that could leave residue on surfaces.

2.4 MORTAR MIXES (REFER TO SECTION 040120.64 BRICK MASONRY REPOINTING)

PART 3 EXECUTION

3.1 PROTECTION

- A. Remove gutters and downspouts adjacent to masonry and store during masonry repair. Reinstall when repairs are complete.
 1. Provide temporary rain drainage during work to direct water away from building.

3.2 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

- D. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole (intact) bricks as possible.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 - 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- G. Replace removed damaged brick with other removed brick in good condition, where possible, matching existing brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
 - 1. Maintain joint width for replacement units to match existing joints.
 - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- I. Construction Tolerances: Align new work to existing masonry. Match existing coursing and joint widths. To the extent feasible given the existing condition, maintain the following tolerances:
 - 1. Maximum variation from plumb in vertical lines and surfaces of columns and walls:
 - a. $\frac{1}{4}$ inch in 10 feet.
 - b. $\frac{3}{8}$ inch in a one-story height not to exceed 20 feet.
 - c. $\frac{1}{2}$ inch over height of building.
 - 2. Maximum variation from plumb for external corners, expansion joints and other conspicuous lines:
 - a. $\frac{1}{4}$ inch in any story or 20 feet maximum.
 - b. $\frac{1}{2}$ inch over height of building.
 - 3. Maximum variation from level of grades for exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines:
 - a. $\frac{1}{4}$ inch in any bay or 20 feet.
 - b. $\frac{1}{2}$ inch over length of wall.
 - c. Maximum variation in joint width: plus or minus $\frac{1}{8}$ inch.
- J. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
 - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 - 2. Rake out mortar used for laying brick before mortar sets according to Section 040120.64 "Brick Masonry Repointing." Point at same time as repointing of surrounding area.
 - 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- K. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.3 FINAL CLEANING (REFER TO SECTION 040110 MASONRY CLEANING)

END OF SECTION

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**SECTION 040120.64
BRICK MASONRY REPOINTING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2025.
- B. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.
- C. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2024.
- D. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2025a.
- E. ASTM C780 - Standard Test Methods for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2025a.

1.2 SUMMARY

- A. Section includes repointing joints with mortar.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.5 INFORMATIONAL SUBMITTALS**1.6 QUALITY ASSURANCE**

- A. Brick Masonry Repointing Specialist Qualifications: Engage an experienced brick masonry repointing firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repointing work.
- B. Mockups: Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Repointing: Remove mortar from joints in two separate areas, each approximately 36 inches high by 48 inches wide, unless otherwise indicated, for each type of repointing required, and repoint one of the areas as specified, including curing. Select mockup locations in coordination with Architect.
 - 2. Do not proceed with overall work prior to review and approval of preparation and repointing mockups by Architect.
 - 3. Retain mockups for reference during the work. Incorporate into work upon completion.

PART 2 PRODUCTS**2.1 MORTAR MATERIALS**

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Mortar Sand: ASTM C144.
 - 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
 - 3. Pigments may be added with prior approval by the Architect.
- D. Water: Potable.
- E. Mortar Testing

1. At least two weeks prior to the start of masonry work, one set of at least nine cubes shall be taken from a batch of mortar prepared by the Contractor, in the presence of the testing laboratory personnel, with the materials to be used for the mortar during the masonry work, in accordance with ASTM C780.
2. One set of at least nine cubes shall be taken at a random day and time each week during the masonry work in accordance with ASTM C780.
3. Three cubes from each set shall be tested at three, seven, and twenty-eight days in accordance with ASTM C270.
4. The results achieved from the weekly sampling taken during the work will be expected to achieve results closely similar or better than that achieved from the set made prior to the start of masonry work.
5. Tests shall be performed at Contractor's cost.

2.2 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, 1 part portland cement, 1 part lime, 6 parts sand.

PART 3 EXECUTION

3.1 PROTECTION

- A. Remove gutters and downspouts and associated hardware adjacent to masonry and store during masonry repointing. Reinstall when repointing is complete.
 1. Provide temporary rain drainage during work to direct water away from building.

3.2 REPOINTING

- A. Remove existing mortar and repoint joints to the following extent:
 1. All joints in areas indicated.
- B. Remove mortar from joints as follows, according to procedures demonstrated in approved mockup:
 1. Remove mortar from joints to depth of not less than 3/4 inch and to a depth where sound mortar is encountered. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
 2. Remove mortar from brick and other masonry surfaces within prepared joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spall edges of brick or other masonry units or widen joints. Replace damaged brick or other masonry units as directed by Architect.
- C. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- D. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 1/4 inch until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.
3. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
4. Tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

E. Coordinate preparation and repointing of joints with cleaning of existing masonry.

3.3 FINAL CLEANING (REFER TO SECTION 040110 MASONRY CLEANING)

END OF SECTION

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SECTION 042200: CONCRETE UNIT MASONRY

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 1 Sections
- B. Section 032000 – Concrete Reinforcement.
- C. Section 033000 – Cast-in-Place Concrete.
- D. Section 042000 – Unit Masonry.

1.2 REFERENCES

TMS 602 – Specification for Masonry Structures.

ASTM A82 – Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

ASTM A615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

ASTM A951 - Standard Specification for Steel Wire for Masonry Joint Reinforcement

ASTM C90 – Standard Specification for Loadbearing Concrete Masonry Units.

ASTM C109 – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens).

ASTM C140 – Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.

ASTM C144 – Standard Specification for Aggregate for Masonry Mortar.

ASTM C270 – Standard Specification for Mortar for Unit Masonry.

ASTM C404 – Standard Specification for Aggregates for Masonry Grout.

ASTM C476 – Standard Specification for Grout for Masonry.

ASTM C1019 – Standard Test Method for Sampling and Testing Grout.

ASTM C1314 – Standard Test Method for Compressive Strength of Masonry Prisms.

ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.

ASTM D2287 – Standard Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds.

1.3 SUBMITTALS

- A. Refer to Structural Quality Assurance Plan in Structural Drawings for additional submittal requirements.
- B. Submit coarse grout mix design.
- C. Shop Drawings: Submit for masonry reinforcement complying with Section 032000.
- D. Submit procedures for construction of masonry walls to be filled with coarse grout. Procedures should include low lift grouting as applicable to Project.

1.4 QUALITY ASSURANCE

- A. Masonry construction and materials shall conform to all the requirements of TMS 602, except as modified by the requirements of the Construction Documents.
- B. Refer to the Structural Quality Assurance Plan in the Structural Drawings.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store materials in a dry condition to protect from elements and prevent contamination, deterioration, or damage due to moisture, temperature changes, contaminants, corrosion, and other causes.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY

- A. Specified Compressive Strength, f'm: See Structural Notes in the Structural Drawings.

2.2 CONCRETE MASONRY UNITS

- A. Concrete masonry units: Comply with ASTM C90.
- B. Weight: Lightweight.
- C. Net Area Compressive Strength of unit: As listed in Table 2 of TMS 602 required for the specified f'm.
- D. Face Dimensions: 16" long x 8" high nominal, unless indicated otherwise.
- E. Special shapes: Where indicated on the Drawings.
- F. Fire Rating: Where indicated in the Architectural Drawings, provide concrete masonry units that comply with the specified fire ratings.

2.3 MORTAR

- A. Mortar: Type M or Type S in accordance with ASTM C270. Refer to Structural Drawings for locations.

- B. Do not use admixtures that contain chlorides.

2.4 COARSE GROUT

- A. Coarse Grout: In accordance with ASTM C476.
- B. Compressive Strength: See Structural Notes in the Structural Drawings.
- C. Slump: 8 and 11 inches.
- D. Do not use admixtures that contain chlorides.

2.5 WATER

- A. Water: Clean potable water free of deleterious substances.

2.6 REINFORCEMENT

- A. Horizontal and Vertical Reinforcing Bars: Comply with Section 032000.

2.7 HORIZONTAL JOINT REINFORCEMENT

- A. Horizontal Joint Reinforcement: Manufactured with longitudinal, parallel, deformed side wires in accordance with ASTM A951 and of the size specified in the Structural Drawings. Cross wires shall be No. 9 gage, plain, in accordance with ASTM A82, unless noted otherwise in Structural Drawings.
- B. Provide as a minimum, one side wire for each face shell of hollow masonry units. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
- C. Ladder type reinforcement shall be used in walls with vertical reinforcement.
- D. Finish: Hot-dipped galvanized in accordance with ASTM A153, Class B-2.
- E. Provide prefabricated corner and tee section accessories.

2.8 CONTRACTION JOINT MATERIAL

- A. Contraction joint material:
 - 1. Rubber shear keys complying with ASTM D2000, M2AA-805 and with a minimum durometer hardness of 80, or
 - 2. PVC shear keys complying with ASTM D2287, Type PVC 654-4 and with a minimum durometer hardness of 85.

PART 3 EXECUTION

3.1 PREPARATION

- A. Cold weather masonry construction shall comply with TMS 602, Section 1.8, Paragraph C when either of the following conditions exist:

1. The ambient air temperature falls below 40 degrees Fahrenheit, or
2. The temperature of masonry units is below 20 degrees Fahrenheit.

- B. Hot weather masonry construction shall comply with TMS 602, Section 1.8, Paragraph D when either of the following conditions exist:
1. The ambient air temperature exceeds 100 degrees Fahrenheit, or
 2. The ambient air temperature exceeds 90 degrees Fahrenheit with a wind velocity greater than 8 mph.
 3. When the ambient temperature exceeds 115 degrees Fahrenheit, or exceeds 105 degrees Fahrenheit with a wind velocity greater than 8 mph, implement the requirements of Article 1.8 D.1.a and shade materials and mixing equipment from direct sunlight.

3.2 CONCRETE MASONRY UNIT PLACEMENT

- A. Use dry masonry units. No frozen or wet units shall be used.
- B. Discard cracked, chipped, and spalled masonry units.
- C. Lay hollow units as follows:
1. With full mortar coverage on horizontal and vertical face shells.
 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, pilasters, and in walls where adjacent to cells or cavities to be filled with grout.
 3. For starting course on footings where cells are not to be grouted, spread out full mortar bed including area under cells.
 4. Maintain joint widths indicated, except for minor variations to maintain joint alignment. If not indicated, lay walls with 3/8 inch joints.
 5. Buttering corners of joints, deep or excess furrowing of mortar joints is not permitted.
- D. Lay units in running bond, unless noted otherwise in the Structural Drawings.
- E. Fully bond external corners of concrete masonry.
- F. Where non-loadbearing masonry partitions extend to underside of floor, roof deck or structural system, stop masonry short 3/8 inch to 1/2 inch to allow for live load deflection. Fill gap with soft joint filler.

3.3 GROUT PLACEMENT

- A. Execute placement of grout in accordance with TMS 602, Section 3.5.
- B. Place coarse grout in maximum 5'-4" lifts, unless intermediate bond beams are present or approved in writing by the architect/structural engineer. In the case of intermediate bond beams in the wall, the maximum lift should be equal to the bond beam spacing.
- C. Do not fill reinforced cells with mortar.

3.4 MOVEMENT JOINTS

- A. Place expansion joints at locations indicated in the Structural Drawings.
1. Do not run any horizontal reinforcing through expansion joints.
- B. Place contraction joints at locations indicated in the Structural Drawings.
1. Install contraction joint material.

2. Do not run horizontal reinforcement through contraction joints, except reinforcement in bond beams at floor and roof levels shall be continuous across contraction joints.

3.5 REINFORCEMENT

- A. Place reinforcing bars as indicated in the Structural Drawings and in accordance with TMS 602, Section 3.4.

3.6 HORIZONTAL JOINT REINFORCEMENT

- A. Place horizontal joint reinforcement in the horizontal mortar beds at spacings noted in the Structural Drawings and noted below.
- B. For masonry below grade, space horizontal joint reinforcing at 8 inches vertically.
- C. Place horizontal joint reinforcement above lintels and below sills at openings. Extend two feet beyond opening.
- D. Joint reinforcement shall be continuous. Lap joint reinforcement a minimum of 8 inches.

3.7 ERECTION BRACING

- A. Design, provide, and install temporary erection bracing during construction as required to stabilize erected masonry until complete structural system is constructed.

3.8 CLEANING AND POINTING

- A. Dry brush masonry surfaces before mortar has set hard to remove mortar crumbs and accumulation.
- B. Clean masonry with commercial brick cleaner approved by brick manufacturer. Protect other work from cleaning materials.
- C. Cut out defective mortar and repoint.

3.9 PROTECTION OF FINISHED WORK

- A. During erection cover top of wall, projections, and sills with strong waterproof membrane at end of each day's work.
 1. Extend and secure cover a minimum of 24 in. down both sides.
- B. Do not apply uniform floor or roof loading for at least 12 hours after placing masonry columns or walls.
- C. Do not apply concentrated loads for at least 3 days after building masonry columns or walls.

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DIVISION 05

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DIVISION 06
WOOD, PLASTIC AND COMPOSITES

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**SECTION 061000
ROUGH CARPENTRY****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Wood products.
 - 2. Wood-preservative-treated lumber.
 - 3. Miscellaneous lumber.
 - 4. Plywood backing panels.

1.2 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. Lumber grading agencies, and abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. SPIB: The Southern Pine Inspection Bureau.
 - 4. WCLIB: West Coast Lumber Inspection Bureau.
 - 5. WWP: Western Wood Products Association.

1.3 REFERENCE STANDARDS

- A. AWWA U1 - Use Category System: User Specification for Treated Wood; 2025.
- B. ICC-ES AC708 - Acceptance Criteria for Power-Actuated Fasteners Driven into Concrete, Steel and Masonry Elements; 2019, with Editorial Revision (2021).
- C. PS 1 - Structural Plywood; 2023.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates:
 - 1. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 PRODUCTS**2.1 WOOD PRODUCTS**

- A. Maximum Moisture Content:
 - 1. Boards: 19 percent.
 - 2. Dimension Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWA U1, Use categories as follows:

1. UC1: Interior construction not in contact with ground or subject to moisture. Include all rough carpentry.
 - a. Wood sills, sleepers, blocking, stripping, and similar concealed members in contact with masonry or concrete.
 - b. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - c. Wood floor plates that are installed over concrete slabs-on-grade.
2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
3. After treatment, redry boards to 19 percent maximum moisture content.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated.
 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, sleepers, blocking, stripping, and similar concealed members in contact with masonry or concrete.
 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 MISCELLANEOUS LUMBER

- A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
 7. Utility shelving.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of the following species:
 1. Mixed southern pine or southern pine; SPIB.
- C. Utility Shelving: Lumber with 19 percent maximum moisture content of the following species and grades:
 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
- D. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:
 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
- E. Roofing Nailers: Structural- or No. 2-grade lumber or better; kiln-dried Douglas fir, southern pine, or wood having similar decay-resistant properties.
- F. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- G. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.4 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, C-C Plugged, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.5 FASTENERS

- A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

PART 3 EXECUTION**3.1 INSTALLATION**

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- E. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- F. Securely attach roofing nailers to substrates by anchoring and fastening to withstand bending, shear, or other stresses imparted by Project wind loads and fastener-resistance loads as designed in accordance with ASCE/SEI 7.
- G. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach wood blocking to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Attach wood roofing nailers securely to substrate to resist the designed outward and upward wind loads indicated on Drawings and in accordance with ANSI/SPRI ED-1, Tables A6 and A7.

3.3 INSTALLATION OF WOOD FURRING

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

3.4 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

**SECTION 062023
INTERIOR FINISH CARPENTRY****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Interior trim, including non-fire-rated interior door and sidelight frames.
 - 2. Interior plywood wall board.
 - 3. OSB oriented Strand board

1.2 DEFINITIONS**1.3 REFERENCE STANDARDS**

- A. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2019a.
- B. PS 1 - Structural Plywood; 2023.
- C. PS 20 - American Softwood Lumber Standard; 2025.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
- B. Samples: For each exposed product and for each color and texture specified.

PART 2 PRODUCTS**2.1 MATERIALS, GENERAL**

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.
- B. Softwood Plywood: DOC PS 1.

2.2 INTERIOR TRIM

- A. Hardwood Lumber Trim :
 - 1. Species and Grade: White Oak ; NHLA Clear .
 - 2. Maximum Moisture Content: 13 percent.
 - 3. Finger Jointing: Not allowed.
 - 4. Gluing for Width: Not allowed .
 - 5. Veneered Material: Not allowed .
 - 6. Face Surface: Surfaced (smooth) .
 - 7. Matching: Selected for compatible grain and color.
- B. Lumber Trim for Opaque Finish (Painted Finish):
 - 1. Species and Grade: Douglas fir-larch or Douglas fir south; NLGA, WCLIB, or WWPA Superior or C & Btr finish.
 - 2. Species and Grade: Spruce-pine-fir; NeLMA, NLGA, WCLIB, or WWPA 1 Common .
 - 3. Maximum Moisture Content: 15 percent.
 - 4. Finger Jointing: Not allowed.
 - 5. Face Surface: Surfaced (smooth) .
 - 6. Optional Material: Primed MDF of same actual dimensions as lumber indicated may be used in lieu of lumber.
- C. Hardwood Moldings : MMPA WM 4, N-grade wood moldings made to patterns included in MMPA's "HWM/Series Hardwood Moulding Patterns."

1. Species: White Oak .
2. Maximum Moisture Content: 9 percent.
3. Finger Jointing: Not allowed.
4. Matching: Selected for compatible grain and color.
5. Optional Material: Kiln-dried softwood or MDF, with exposed surfaces veneered with species indicated, may be used in lieu of solid wood.

2.3 SOFTWOOD PLYWOOD

- A. Softwood plywood finish.
 1. Face Veneer Species and Cut: Southern Pine or Douglas fir
 2. Veneer Matching: Random match .
 3. Backing Veneer Species: Same species as face veneer .
 4. Grade: Grade A on exposed faces
 5. Construction: 5 ply veneer.
 6. Thickness: 15/32 inch .
 7. Panel Size: 4 x 8 .

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.
- B. Low-Emitting Materials: Adhesives shall comply with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
- D. Paneling Adhesive: Comply with paneling manufacturer's written instructions for adhesives.
- E. Multipurpose Construction Adhesive: Formulation, complying with ASTM D3498, that is recommended for indicated use by adhesive manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

- A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.
 1. Exposed plywood shall be attached to wood studs @ 16" o.c. with countersunk fasteners set flush with face of plywood. Sand rough edges.
 2. Use concealed shims where necessary for alignment.
 3. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 4. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
 5. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 6. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

END OF SECTION

SECTION 064116
PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS
PART 1 GENERAL**1.1 REFERENCE STANDARDS**

- A. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- B. BHMA A156.9 - Cabinet Hardware; 2020.
- C. BHMA A156.16 - Standard for Auxiliary Hardware; 2023.
- D. BHMA A156.18 - Standard for Materials and Finishes; 2020.
- E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

- A. Section Includes:
 - 1. Plastic-laminate-faced architectural cabinets.
 - 2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets that are not concealed within other construction.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
 - 2. Section 123623.13 "Plastic-Laminate-Clad Countertops."

1.4 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.
- B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 087100 "Door Hardware" to fabricator of architectural cabinets; coordinate Shop Drawings and fabrication with hardware requirements.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: For plastic-laminate-faced architectural cabinets.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Show full-size details.
 - 3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - 4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.
 - 5. Apply AWI Quality Certification Program label to Shop Drawings.
- C. Samples: For each exposed product and for each color and texture specified, in manufacturer's or fabricator's standard size.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Quality Standard Compliance Certificates: .

1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - 1. Shop Certification: .

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.9 FIELD CONDITIONS

- A. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.
- B. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 PRODUCTS**2.1 ARCHITECTURAL CABINET FABRICATORS**

- A. Fabricators: Subject to compliance with requirements, available fabricators offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. ???Insert, in separate subparagraphs, names and contact information for preapproved woodworking firms???

2.2 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of cabinets indicated for construction, finishes, installation, and other requirements.
 - 1. Provide inspections of fabrication and installation together with labels and certificates from AWI certification program indicating that woodwork complies with requirements of grades specified.
 - 2. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.
- B. Grade: Custom .
- C.
- D.
- E. Door and Drawer-Front Style: Flush overlay.
 - 1. Reveal Dimension: As indicated ???Insert dimension???
- F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.
 - 1.
- G. Laminate Cladding for Exposed Surfaces:
 - 1. Horizontal Surfaces: Grade HGS .
 - 2. Vertical Surfaces: Grade HGS Grade VGS.
 - 3. Pattern Direction: Vertically for drawer fronts, doors, and fixed panels .

- H. Materials for Semiexposed Surfaces:
 - 1. Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
 - a. Edges of Plastic-Laminate Shelves: .
 - b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
 - 2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
 - 3. Drawer Bottoms: Thermoset decorative panels.
- I. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
 - 1. Join subfronts, backs, and sides with glued dovetail joints.
- J. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. Match Architect's sample.

2.3 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1.
- C.
 - 1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130 .
 - 2. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.4 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in
 - 1.
- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100 degrees of opening , self-closing.
- C. Adjustable Shelf Standards and Supports: BHMA A156.9 , B04071; with shelf rests, B04081.
- D. Shelf Rests: BHMA A156.9, B04013; metal.
- E. Drawer Slides: BHMA A156.9.
 - 1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer.
 - a. Type: Full extension.
 - b. Material: Zinc-plated steel with polymer rollers.
 - 2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
 - 3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 2.
 - 4. For drawers more than 3 inches high, but not more than 6 inches high and not more than 24 inches wide, provide Grade 1.
 - 5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-100.
 - 6. For computer keyboard shelves, provide Grade 1.
 - 7. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-100.
- F. Slides for Sliding Glass Doors: BHMA A156.9, B07063; plastic.
- G. Door and Drawer Silencers: BHMA A156.16, L03011.
- H. Grommets for Cable Passage: 1-1/4-inch ???Insert dimension??? OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

1. Color: Black ???Insert color???
- I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 1. Satin Stainless Steel: BHMA 630.

2.5 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.6 FABRICATION

- A. Fabricate architectural cabinets to dimensions, profiles, and details indicated.
- B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 1. Notify Architect seven days in advance of the dates and times architectural cabinet fabrication will be complete.
 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 EXECUTION

3.1 PREPARATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

- A. Grade: Install cabinets to comply with quality standard grade of item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.
 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION

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DIVISION 07
THERMAL AND MOISTURE PROTECTION

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**SECTION 072413
POLYMER-BASED EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster; 2025a.
- B. ASTM C1397 - Standard Practice for Application of Class PB Exterior Insulation and Finish Systems (EIFS) and EIFS with Drainage; 2025.
- C. ASTM D1784 - Standard Classification System and Basis for Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds; 2025.
- D. ASTM E2568 - Standard Specification for PB Exterior Insulation and Finish Systems; 2017a.

1.2 SUMMARY

- A. Section Includes:
 - 1. EIFS-clad barrier-wall assemblies that are field applied over substrate.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .

1.4 ACTION SUBMITTALS

- A. Product Data: For each EIFS component, trim, and accessory.
- B. Samples: For each exposed product and for each color and texture specified.

1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer certificates.
- B. Product certificates.
- C. Product test reports.
- D. Field quality-control reports.
- E. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An installer who is certified in writing by AWCI International as qualified to install Class PB EIFS using trained workers.

1.8 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace components of EIFS that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A.

2.2 PERFORMANCE REQUIREMENTS

- A. EIFS Performance: Comply with ASTM E2568 and with the following:
 - 1. Weathertightness: Resistant to water penetration from exterior.
 - 2. Impact Performance: ASTM E2568, Standard impact resistance unless otherwise indicated.

2.3 EIFS MATERIALS

- A. Flexible-Membrane Flashing: Cold-applied, self-adhering, self-healing, rubberized-asphalt and polyethylene-film composite sheet or tape and primer; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.
- B. Insulation Adhesive: EIFS manufacturer's standard formulation designed for indicated use; compatible with substrate.
 - 1.
 - 2.
- C. Molded, (Expanded) Rigid Cellular Polystyrene Board Insulation: Comply with ASTM E 2430/E 2430M.
 - 1. Foam Buildouts: Provide with profiles and dimensions indicated on Drawings.
- D. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials, made from continuous multi-end strands with retained mesh tensile strength of not less than 120 lbf/in. according to ASTM E 2098/E 2098M.
 - 1. Reinforcing Mesh for EIFS, General: Not less than weight required to comply with impact-performance level specified in "Performance Requirements" Article.
- E. Primer: EIFS manufacturer's standard factory-mixed, elastomeric-polymer primer for preparing base-coat surface for application of finish coat.
- F. Finish Coat: EIFS manufacturer's standard acrylic-based coating .
 - 1. Colors: As indicated by manufacturer's designations.
 - 2. Textures: As indicated by manufacturer's designations.
- G. Trim Accessories: Type as designated or required to suit conditions indicated and to comply with EIFS manufacturer's written instructions; manufactured from UV-stabilized PVC; and complying with ASTM D1784 and ASTM C1063.

PART 3 EXECUTION

3.1 EIFS INSTALLATION

- A. Comply with ASTM C1397, ASTM E 2511, and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate.
- B. Flexible-Membrane Flashing: Apply and lap to shed water; seal at openings, penetrations, and terminations. Prime substrates with flashing primer if required and install flashing.
- C. Trim: Apply trim accessories at perimeter of EIFS, at expansion joints, at windowsills, and elsewhere as indicated. Coordinate with installation of insulation.
- D. Board Insulation: Adhesively attach insulation to substrate in compliance with ASTM C1397.
 - 1. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1/32 inch from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch. Prevent airborne dispersal and immediately collect insulation raspings or sandings.
 - 2. Coordinate installation of flashing and insulation to produce wall assembly that does not allow water to penetrate behind flashing and EIFS lamina.
- E. Expansion Joints: Install at locations indicated and where required by EIFS manufacturer.
- F. Water-Resistant Base Coat: Apply full-thickness coverage to exposed insulation and to exposed surfaces of sloped shapes ???Insert location??? and to other surfaces indicated on Drawings.
- G. Base Coat: Apply full coverage to exposed insulation and foam buildouts with not less than 1/16-inch ???Insert dimension??? dry-coat thickness.
- H. Reinforcing Mesh: Embed reinforcing mesh in wet base coat to produce wrinkle-free installation with mesh continuous at corners, overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM C1397. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are invisible.

POLYMER-BASED EXTERIOR

- I. Double-Layer Reinforcing-Mesh Application: Where indicated or required, apply second base coat and second layer of reinforcing mesh, overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM C1397 in same manner as first application. Do not apply until first base coat has cured.
- J. Additional Reinforcing Mesh: Apply strip-reinforcing mesh around openings, extending 4 inches beyond perimeter. Apply additional 9-by-12-inch strip-reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 8-inch- wide, strip-reinforcing mesh at both inside and outside corners unless base layer of mesh is lapped not less than 4 inches on each side of corners.
- K. Foam Buildouts: Fully embed reinforcing mesh in base coat.
- L. Double Base-Coat Application: Where indicated, apply second base coat in same manner and thickness as first application, except without reinforcing mesh. Do not apply until first base coat has cured.
- M. Finish Coat: Apply full-thickness coverage over dry primed base coat, maintaining a wet edge at all times for uniform appearance, to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.
- N. Sealer Coat: Apply over dry finish coat, in number of coats and thickness required by EIFS manufacturer.

3.2 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- C. EIFS Tests and Inspections: According to ASTM E2568.
- D. EIFS will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION

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**SECTION 078413
PENETRATION FIRESTOPPING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2024.
- B. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems; 2024.
- C. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.

1.2 SUMMARY

- A. Section Includes: Penetration firestopping systems.
- B. Related Requirements:
 - 1. Section 078443 "Joint Firestopping" for joints in or between fire-resistance-rated construction, at exterior curtain-wall/floor intersections, and in smoke barriers.

1.3 ACTION SUBMITTALS

- A. Product Data: Penetration firestopping systems.
- B. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.
 - 1. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system, submit illustration, with modifications marked, approved by penetration firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly developed in accordance with current International Firestop Council (IFC) guidelines. Obtain approval of authorities having jurisdiction prior to submittal.

1.4 INFORMATIONAL SUBMITTALS**1.5 CLOSEOUT SUBMITTALS****1.6 QUALITY ASSURANCE**

- A. Installer Qualifications: A firm that has been approved by FM Approvals according to FM Approvals 4991, "Approval Standard for Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install penetration firestopping system when ambient or substrate temperatures are outside limits permitted by penetration firestopping system manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
- B. Install and cure penetration firestopping materials per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping systems can be installed according to specified firestopping system design.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping systems.

PART 2 PRODUCTS**2.1 SOURCE LIMITATIONS**

- A. Obtain penetration firestop systems for each type of opening indicated from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:

1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
2. Test in accordance with testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
 - a. Penetration firestop systems installed with products bearing the classification marking of a qualified product certification agency in accordance with listed system designs published by a qualified testing agency.
 - 1) UL in its online directory "Product iQ."
 - 2) Intertek Group in its "Directory of Building Products."
 - 3) FM Approvals in its "Approval Guide."

2.3 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems are to be compatible with one another, with the substrates forming openings, and with penetrating items if any.
 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Hilti, Inc.
- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined in accordance with ASTM E814 or UL 1479.
 1. F-Rating: Not less than the fire-resistance rating of the wall penetrated.
 2. Membrane Penetrations: Install recessed fixtures such that the required fire resistance will not be reduced.
- C. Penetrations in Horizontal Assemblies: Penetration firestopping systems with ratings determined in accordance with ASTM E814 or UL 1479.
 1. F-Rating: At least one hour, but not less than the fire-resistance rating of the floor penetrated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Before installing penetration firestopping systems, clean out openings immediately to comply with manufacturer's written instructions and with the following requirements:
 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping materials.
 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping materials. Remove loose particles remaining from cleaning operation.
 3. Remove laitance and form-release agents from concrete.
- B. Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION OF PENETRATION FIRESTOPPING SYSTEMS

- A. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.
- B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.

1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- C. Install fill materials by proven techniques to produce the following results:
 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

3.5 FIELD QUALITY CONTROL

- A. Owner will engage a qualified testing agency to perform tests and inspections according to ASTM E2174.
- B. Where deficiencies are found or penetration firestopping system is damaged or removed because of testing, repair or replace penetration firestopping system to comply with requirements.
- C. Proceed with enclosing penetration firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTION

- A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping material and install new materials to produce systems complying with specified requirements.

END OF SECTION

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**SECTION 078443
JOINT FIRESTOPPING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems; 2024.
- B. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-Story Test Apparatus; 2025.
- C. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.

1.2 SUMMARY

- A. Section Includes:
 - 1. Joints in or between fire-resistance-rated constructions.
 - 2. Joints at exterior curtain-wall/floor intersections.
 - 3. Joints in smoke barriers.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Schedule: For each joint firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing agency.
 - 1. Engineering Judgments: Where Project conditions require modification to a qualified testing agency's illustration for a particular joint firestopping system condition, submit illustration, with modifications marked, approved by joint firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

PART 2 PRODUCTS**2.1 JOINT FIRESTOPPING SYSTEMS**

- A. Joint Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which joint firestopping systems are installed. Joint firestopping systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
- B. Joints in or between Fire-Resistance-Rated Construction: Provide joint firestopping systems with ratings determined per ASTM E1966 or UL 2079.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. 3M Fire Protection Products.
 - b. ClarkDietrich.
 - c. Hilti, Inc.
 - d. Rockwool International.
 - e. Tremco, Inc.
 - 2. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the wall, floor, or roof in or between which it is installed.
- C. Joints at Exterior Curtain-Wall/Floor Intersections: Provide joint firestopping systems with rating determined per ASTM E2307.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. 3M Fire Protection Products.
 - b. ClarkDietrich.

- c. Hilti, Inc.
 - d. Rockwool International.
 - e. Tremco, Inc.
- 2. F-Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.
- D. Joints in Smoke Barriers: Provide joint firestopping systems with ratings determined per UL 2079 based on testing at a positive pressure differential of 0.30-inch wg.
 - 1. L-Rating: Not exceeding 5.0 cfm/ft. of joint at both ambient and elevated temperatures.
- E. Accessories: Provide components of joint firestopping systems, including primers and forming materials, that are needed to install elastomeric fill materials and to maintain ratings required. Use only components specified by joint firestopping system manufacturer and approved by the qualified testing agency for conditions indicated.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.
- B. General: Install joint firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- C. Install forming materials and other accessories of types required to support elastomeric fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing elastomeric fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.
- D. Install elastomeric fill materials for joint firestopping systems by proven techniques to produce the following results:
 - 1. Elastomeric fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
 - 2. Apply elastomeric fill materials so they contact and adhere to substrates formed by joints.
 - 3. For elastomeric fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

END OF SECTION

**SECTION 079200
JOINT SEALANTS****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- B. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.
- D. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.
- E. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.
- F. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2019 (Reapproved 2025).

1.2 SUMMARY

- A. Section Includes:
 - 1. Nonstaining silicone joint sealants.
 - 2. Urethane joint sealants.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples: For each kind and color of joint sealant required.
- C. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer's letter approving use of specific sealant in each installation.
- B. Product test reports.
- C. Preconstruction laboratory test reports.
- D. Preconstruction field-adhesion-test reports.
- E. Field-adhesion-test reports.
- F. Sample warranties.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.
- B. Mock-up: Provide mock up for each sealant type and installation

1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

1.8 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 JOINT SEALANTS, GENERAL**

- A. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's standard colors.

2.2 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
- C. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
- D. DOWSIL 756 SMS Building Sealant

2.3 URETHANE JOINT SEALANTS

- A. Urethane, S, NS, 25, NT: Single-component, nonsag, nontraffic-use, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT. (Interior)
- B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
- C. MasterSeal NP 1

2.4 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C1330, Type B (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 EXECUTION**3.1 PREPARATION**

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Remove existing joint fill and all traces of mortar and sealant from bond surfaces.

3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with ASTM C1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability, and to prevent three-sided adhesion.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 1. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.

3.3 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 2 tests for the first 25 feet of joint length for each kind of sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

3.4 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
 1. Joint Locations:
 - a. Control and expansion joints in unit masonry, as shown on Drawings.
 - b. Upward facing joints in copings, cornices, etc., as shown on Drawings.
 - c. Interface between dissimilar materials, at locations shown on Drawings.
 2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's standard range of colors.

END OF SECTION

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**SECTION 079219
ACOUSTICAL JOINT SEALANTS****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2024.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.
- D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

1.2 SUMMARY

- A. Section Includes:
 - 1. Acoustical joint sealants.

1.3 ACTION SUBMITTALS

- A. Product data.

1.4 INFORMATIONAL SUBMITTALS**1.5 CLOSEOUT SUBMITTALS**

- A. Warranty Documentation:
 - 1. Manufacturers' special warranties.
 - 2. Installer's special warranties.

1.6 WARRANTY

- A. Installer's Special Warranty: Installer agrees to repair or replace acoustical joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Manufacturer's Special Warranty: Manufacturer agrees to furnish acoustical joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: 1 years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 ACOUSTICAL JOINT SEALANTS**

- A. Acoustical joint-sealant products that effectively reduce airborne sound transmission through perimeter joints and openings in building construction, as demonstrated by testing representative assemblies in accordance with ASTM E90.
- B. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex acoustical sealant complying with ASTM C834.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Grabber Construction Products, Inc.
 - b. OSI Sealants; Henkel Corporation.
 - 2. Colors of Exposed Acoustical Joint Sealants: As indicated by manufacturer's designations

2.2 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by acoustical joint-sealant manufacturer where required for adhesion of sealant to joint substrates.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or

harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive acoustical joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where recommended by acoustical joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

- A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.
- B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations. Comply with ASTM C919, ASTM C1193, and manufacturer's written instructions for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.

END OF SECTION

DIVISION 08
OPENINGS

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**SECTION 081113
HOLLOW METAL DOORS AND FRAMES****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Interior standard steel doors and frames.
 - 2. Exterior standard steel doors and frames.
- B. Related Requirements:
 - 1. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.4 REFERENCE STANDARDS

- A. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.
- B. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2024.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2025.
- E. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames; 2022.
- F. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- G. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- H. ASTM A879/A879M - Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface; 2022.
- I. 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; 2025.
- J. 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; 2025.
- K. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2024.
- L. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024c.
- M. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials; 2019.
- N. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes; 2023.
- O. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

- P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- Q. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- 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. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- U. UL 1784 - Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives; Current Edition, Including All Revisions.

1.5 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Details of each different wall opening condition.
 - 5. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 - 6. Details of anchorages, joints, field splices, and connections.
 - 7. Details of accessories.
 - 8. Details of moldings, removable stops, and glazing.
- C. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For door inspector.
 - 1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
- B. Product Test Reports: For each type of fire-rated hollow-metal door and frame assembly windborne-debris impact resistance door and thermally rated door assemblies for tests performed by a qualified testing agency indicating compliance with performance requirements.
- C. Field quality control reports.

1.8 CLOSEOUT SUBMITTALS

- A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.9 QUALITY ASSURANCE

- A. Fire-Rated Door Inspector Qualifications: Inspector for field quality control inspections of fire-rated door assemblies shall meet the qualifications set forth in NFPA 80, section 5.2.3.1 and the following:
 - 1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.
- B. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch- high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ceco Door; ASSA ABLOY.
 - 2. Curries Company; ASSA ABLOY.
 - 3. Steelcraft; an Allegion brand.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated on Drawings, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
- B. Windborne-Debris Impact Resistance: Passes ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 3 for basic protection.
 - 1. Large-Missile Test: For glazed openings located within 30 feet of grade.

2.3 INTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B. .
 - 1. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Uncoated steel sheet, minimum thickness of 0.042 inch.
 - d. Edge Construction: Model 1, Full Flush .
 - e. Edge Bevel: Provide manufacturer's standard beveled or square edges.
 - f. Core: Polystyrene .
 - g. Fire-Rated Core: Manufacturer's standard vertical steel stiffener laminated mineral board core for fire-rated and temperature-rise-rated doors.
 - 2. Frames:
 - a. Materials: Uncoated steel sheet, minimum thickness of 0.053 inch.
 - b. Sidelite Frames: Fabricated from same thickness material as adjacent door frame.
 - c. Construction: Full profile welded.
 - d. Insulation: Frame should be solidly packed with insulation.
 - 3. Exposed Finish: Prime .

2.4 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 - 2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.

3. Postinstalled Expansion Anchor: Minimum 3/8-inch- diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.
- B. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized according to ASTM A153/A153M, Class B.

2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.
- E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- F. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.
- G. Glazing: Comply with requirements in Section 088000 "Glazing."

2.6 FABRICATION

- A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding.
 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.
 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.
- D. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted hairline joints.
 1. Provide stops and moldings flush with face of door, and with square stops unless otherwise indicated.
 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.

4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. Hollow-Metal Frames: Comply with ANSI/SDI A250.11 .
 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 2. Fire-Rated Openings: Install frames according to NFPA 80.
 3. Floor Anchors: Secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 4. Solidly pack mineral-fiber insulation inside frames.
 5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
 6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 7. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- B. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
 1. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8 .
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 3. Smoke-Control Doors: Install doors according to NFPA 105.
- C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 FIELD QUALITY CONTROL

- A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to Architect.
- B. Inspections:
 - 1. Fire-Rated Door Inspections: Inspect each fire-rated door according to NFPA 80, Section 5.2.
- C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- D. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.
- E. Prepare and submit separate inspection report for each fire-rated door assembly indicating compliance with each item listed in NFPA 80 and NFPA 101.

3.4 REPAIR

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- C. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.
- D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION

**SECTION 081416
FLUSH WOOD DOORS****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard; 2022.
- B. AWI/AWMAC/WI - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- E. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
- G. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2021, with Errata (2022).

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

- A. Section Includes:
 - 1. Solid-core flush wood doors with plastic-laminate-faces.
 - 2. Factory finishing flush wood doors.
 - 3. Factory fitting flush wood doors to frames and factory machining for hardware.
- B. Related Requirements:
 - 1. Section 099123 "Interior Painting" for field finishing doors.

1.4 PREINSTALLATION MEETINGS**1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product, including the following:
 - 1. Door core materials and construction.
 - 2. Door edge construction
 - 3. Door face type and characteristics.
 - 4. Door trim for openings.
 - 5. Door frame construction.
 - 6. Factory-machining criteria.
 - 7. Factory- finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:
 - 1. Door schedule indicating door location, type, size, fire protection rating, and swing.
 - 2. Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
 - 3. Details of frame for each frame type, including dimensions and profile.
 - 4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 - 5. Dimensions and locations of blocking for hardware attachment.
 - 6. Dimensions and locations of mortises and holes for hardware.
 - 7. Clearances and undercuts.
 - 8. Requirements for veneer matching.
 - 9. Doors to be factory finished and application requirements.
- C. Samples for Initial Selection: For plastic-laminate door faces .
- D. Samples for Verification:

1. Plastic laminate, 6 inches square, for each color, texture, and pattern selected.
2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edges representing actual materials to be used.
3. Frames for light openings, 6 inches long, for each material, type, and finish required.

1.6 CLOSEOUT SUBMITTALS

- A. Special warranties.

1.7 QUALITY ASSURANCE

- A. Fire-Rated Door Inspector Qualifications: Inspector for field quality-control inspections of fire-rated door assemblies shall comply with qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:
 1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.
- B. Egress Door Inspector Qualifications: Inspector for field quality-control inspections of egress door assemblies shall comply with qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:
 1. DHI's Fire and Egress Door Assembly Inspector (FDAI) certification.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons .
- C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and HVAC system is operating and maintaining temperature and relative humidity at levels designed for building occupants for the remainder of construction period.
- B. Environmental Limitations: Do not deliver or install doors until building is enclosed and weathertight, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during remainder of construction period.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Delamination of veneer.
 - b. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - c. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Wood Door and Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated on Drawings, based on testing at positive pressure in accordance with NFPA 252.

1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.

2.3 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI/AWMAC/WI's "Architectural Woodwork Standards."
 1. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with the Contract Documents in addition to those of the referenced quality standard.

2.4 SOLID-CORE FLUSH WOOD DOORS WITH PLASTIC-LAMINATE FACES

- A. Interior Doors :
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ASSA ABLOY.
 - b. Eggers Industries.
 - c. VT Industries Inc.
 2. Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty .
 3. Plastic-Laminate Faces: High-pressure decorative laminates complying with NEMA LD 3, Grade HGS .
 4. Colors, Patterns, and Finishes: .
 - a. PLAM-01:
 - 1) Manufacturer: Wilson-Art
 - 2) Type/Color: Match Existing
 - 3) Finish: 78 Fine Grain Finish
 - 4) Application: Vertical
 5. Exposed Vertical and Top Edges: Plastic laminate that matches faces, applied before faces .
 - a. Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.
 6. Core for Non-Fire-Rated Doors:
 - a. ANSI A208.1, Grade LD-1 particleboard.
 - 1) Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
 - b. Glued wood stave.
 7. Construction: Three plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before faces are applied.
 8. Construction: Five plies, hot-pressed bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before faces and crossbands are applied.

2.5 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated.
 1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 2. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
 1. Locate hardware to comply with DHI-WDHS-3.
 2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
 3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
 4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.

5. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- C. Openings: Factory cut and trim openings through doors.
 1. Light Openings: Trim openings with moldings of material and profile indicated.
 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."
 3. Louvers: Factory install louvers in prepared openings.

2.6 FACTORY FINISHING

- A. Comply with referenced quality standard for factory finishing.
 1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 2. Finish faces, all four edges, edges of cutouts, and mortises.
- B. Factory finish doors.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Install doors and frames to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Install frames level, plumb, true, and straight.
 1. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
 2. Anchor frames to anchors or blocking built in or directly attached to substrates.
 - a. Secure with countersunk, concealed fasteners and blind nailing.
 - b. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
 - 1) For factory-finished items, use filler matching finish of items being installed.
 3. Install fire-rated doors and frames in accordance with NFPA 80.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION

**SECTION 084313
ALUMINUM-FRAMED STOREFRONTS****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. AAMA 611 - Specification for Anodized Architectural Aluminum; 2024.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- C. 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; 2025.
- D. 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; 2025.
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- F. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles; 2020.
- G. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2025.
- H. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2023.
- I. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).

1.2 SUMMARY

- A. Section Includes:
 - 1. Aluminum-framed storefront systems.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For aluminum-framed storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
 - 1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
 - 2. Include full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed storefronts, showing the following:
 - a. Joinery, including concealed welds.
 - b. Anchorage.
 - c. Expansion provisions.
 - d. Glazing.
 - e. Flashing and drainage.
- C. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
- D. Delegated-Design Submittal: For aluminum-framed storefronts indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data:
 - 1. For Installer .
 - 2. For professional engineer's experience with providing delegated-design engineering services of the type indicated, including documentation that engineer is licensed in the state in which Project is located.
- B. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For aluminum-framed storefronts to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer and that employs a qualified glazing contractor for this Project who is certified under the North American Contractor Certification Program (NACC) for Architectural Glass & Metal (AGM) contractors.
- B. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
 - 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

1.7 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace components of aluminum-framed storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures, including, but not limited to, excessive deflection.
 - b. Noise or vibration created by wind and thermal and structural movements.
 - c. Deterioration of metals , metal finishes, and other materials beyond normal weathering.
 - d. Water penetration through fixed glazing and framing areas.
 - e. Failure of operating components.
 - 2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Warranty Period: Five years from date of Substantial Completion.
- C. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.
 - 1. Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, peeling, or chipping.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Kanweer Trifab 400 Framing System or comparable product by one of the following:
 - 1. EFCO Corporation.
 - 2. Kanweer Company, Inc.; Arconic Corporation.
 - 3. YKK AP America Inc.
- B. Source Limitations: Obtain all components of aluminum-framed storefront system, including framing and accessories, from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design aluminum-framed storefronts.
- B. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
 - 1. Aluminum-framed storefronts shall withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 - 2. Failure also includes the following:
 - a. Thermal stresses transferring to building structure.
 - b. Glass breakage.
 - c. Noise or vibration created by wind and thermal and structural movements.
 - d. Loosening or weakening of fasteners, attachments, and other components.
 - e. Failure of operating units.
- C. Structural Loads:
 - 1. Wind Loads: As indicated on Drawings.
 - 2. Other Design Loads: As indicated on Drawings .
- D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:
 - 1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches .
 - 2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch .
 - a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.
 - 3. Cantilever Deflection: Limited to 2l/175 at unsupported cantilevers.
- E. Structural: Test in accordance with ASTM E330/E330M as follows:
 - 1. When tested at positive and negative wind-load design pressures, storefront assemblies do not evidence deflection exceeding specified limits.
 - 2. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
 - 3. Test Durations: As required by design wind velocity, but not less than 10 seconds.
- F. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
 - 2. Thermal Cycling: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested in accordance with AAMA 501.5.

- a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F .
- b. Low Exterior Ambient-Air Temperature: 0 deg F .
- c. Interior Ambient-Air Temperature: 75 deg F .

2.3 ALUMINUM-FRAMED STOREFRONT SYSTEMS

- A. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
 1. Interior Framing Construction: Nonthermal .
 2. Glazing System: Retained mechanically with gaskets on four sides .
 3. Glazing Plane: Center .
 4. Finish: Clear anodic finish .
 5. Fabrication Method: Field-fabricated stick system.
 6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 7. Steel Reinforcement: As required by manufacturer.
- B. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.
- C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

2.4 GLAZING

- A. Glazing: Comply with Section 088000 "Glazing."
- B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.
- C. Glazing Sealants: As recommended by manufacturer.

2.5 MATERIALS

- A. Sheet and Plate: ASTM B209.
- B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.
- C. Structural Profiles: ASTM B308/B308M.
- D. Steel Reinforcement:
 1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
 2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
 3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.
- E. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

2.6 ACCESSORIES

- A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
 2. Reinforce members as required to receive fastener threads.
 3. Use exposed fasteners with countersunk Phillips screw heads , finished to match framing system .

2.7 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

- C. Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations.
 - 2. Accurately fitted joints with ends coped or mitered.
 - 3. Physical and thermal isolation of glazing from framing members.
 - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 - 5. Provisions for field replacement of glazing from interior .
 - 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- E. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

2.8 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.0007 inch or thicker.

2.9 SOURCE QUALITY CONTROL

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written instructions.
- B. Do not install damaged components.
- C. Fit joints to produce hairline joints free of burrs and distortion.
- D. Rigidly secure nonmovement joints.
- E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
- F. Seal perimeter and other joints watertight unless otherwise indicated.
- G. Metal Protection:
 - 1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
 - 2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- H. Install components plumb and true in alignment with established lines and grades.

3.3 INSTALLATION OF OPERABLE UNITS

3.4 INSTALLATION OF GLAZING

- A. Install glazing as specified in Section 088000 "Glazing."

3.5 INSTALLATION OF WEATHERSEAL SEALANT

- A. Install weatherseal sealant to completely fill cavity, according to sealant manufacturer's written instructions, to produce weatherproof joints.

3.6 ERECTION TOLERANCES

- A. Install aluminum-framed storefronts to comply with the following maximum tolerances:
 - 1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.
 - 2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.
 - 3. Alignment:

- a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
 - b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
 - c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/4 inch.
4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

END OF SECTION

**SECTION 087100
DOOR HARDWARE****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2024.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- D. BHMA A156.1 - Standard for Butts and Hinges; 2021.
- E. BHMA A156.2 - Bored and Preamsembled Locks and Latches; 2022.
- F. BHMA A156.4 - Door Closers and Pivots; 2024.
- G. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.
- H. BHMA A156.6 - Standard for Architectural Door Trim; 2021.
- I. BHMA A156.16 - Standard for Auxiliary Hardware; 2023.
- J. BHMA A156.17 - Self Closing Hinges & Pivots; 2025.
- K. BHMA A156.18 - Standard for Materials and Finishes; 2020.
- L. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems; 2023.
- M. BHMA A156.30 - High Security Cylinders; 2020.
- N. BHMA A156.36 - Auxiliary Locks; 2020.

1.2 SUMMARY

- A. Section Includes:
 - 1. Hinges.
 - 2. Self-closing hinges and pivots.
 - 3. Bored locks.
 - 4. Bored auxiliary locks.
 - 5. Manual flush bolts.
 - 6. Lock cylinders.
 - 7. Surface closers.
 - 8. Wall- and floor-mounted stops.
 - 9. Metal protective trim units.
- B. Related Requirements:
 - 1. Section 081213 "Hollow Metal Frames" .
 - 2. Section 081416 "Flush Wood Doors" for

1.3 COORDINATION

- A. Floor-Recessed Door Hardware: Coordinate layout and installation with floor construction.
 - 1. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field-verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of product data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
 - 2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
 - 3. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
 - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
 - e. Fastenings and other installation information.
 - f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
 - g. Mounting locations for door hardware.
 - h. List of related door devices specified in other Sections for each door and frame.
- C. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lockup for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

PART 2 PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the USDOJ's "2010 ADA Standards for Accessible Design".
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
 - 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
 - b. Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.2 HINGES

- A. Hinges: ANSI/BHMA A156.1.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Allegion plc
 - b. Bommer Industries, Inc
 - c. Hager Companies
 - d. STANLEY; dormakaba USA, Inc.
 2. Basis-of-Design Product: Subject to compliance with requirements, provide ASSA ABLOY or comparable product by one of the following:
 - a. Allegion plc
 - b. Bommer Industries, Inc
 - c. Hager Companies
 - d. STANLEY; dormakaba USA, Inc.

2.3 SELF-CLOSING HINGES AND PIVOTS

- A. Self-Closing Hinges and Pivots: ANSI/BHMA A156.17.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide BH905 by ASSA ABLOY
 - a. Allegion plc
 - b. Bommer Industries, Inc
 - c. Cal-Royal Products, Inc
 - d. Design Hardware; Mesker Openings Group; dormakaba
 - e. Don-Jo Mfg., Inc
 - f. Hager Companies
 - g. McKinney Products Company; ASSA ABLOY Accessories and Door Controls Group, Inc.; ASSA ABLOY
 - h. PBB, Inc
 - i. STANLEY; dormakaba USA, Inc.

2.4 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 1. Bored Locks: Minimum 1/2-inch latchbolt throw.
 2. Mortise Locks: Minimum 3/4-inch latchbolt throw.
 3. Deadbolts: Minimum 1.25-inch bolt throw.
- C. Lock Backset: 2-3/4 inches unless otherwise indicated.
- D. Lock Trim:
 1. Description: As indicated
 2. Levers: Wrought Forged Cast.
 3. Escutcheons (Roses): Wrought Forged Cast.
 4. Dummy Trim: Match lever lock trim and escutcheons.
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

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: Manufacturer's special strike box fabricated for aluminum framing.
 4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.
- F. Bored Locks: ANSI/BHMA A156.2, Grade 1 Series 4000.
1. Basis-of-Design Product: Subject to compliance with requirements, provide CL3000-3500 series-PZD-626-CT6D LFIC
 - a. Allegion plc
 - b. Arrow USA; an ASSA ABLOY Group company
 - c. BEST Access Solutions, Inc.; dormakaba USA Inc.
 - d. Cal-Royal Products, Inc
 - e. Corbin Russwin, Inc.; an ASSA ABLOY Group company
 - f. Design Hardware; Mesker Openings Group; dormakaba
 - g. dormakaba USA Inc.
 - h. Hager Companies
 - i. INOX; Unison Hardware, Inc
 - j. Lawrence Hardware Inc.
 - k. Marks USA; Napco Security Technologies, Inc.
 - l. PAMEX Inc.
 - m. PDQ Industries, Inc.
 - n. SARGENT Manufacturing Company; ASSA ABLOY
 - o. SOSS Door Hardware; Universal Industrial Products, Inc.
 - p. STANLEY; dormakaba USA, Inc.
 - q. Weiser; part of the Spectrum Brands Hardware and Home Improvement Group (HHI)
 - r. Yale Security Inc; ASSA ABLOY

2.5 AUXILIARY LOCKS

- A. Bored Auxiliary Locks: ANSI/BHMA A156.36, Grade 2; with strike that suits frame.
1. Basis-of-Design Product: Subject to compliance with requirements, provide DL3200 Series Deadbolt by
 - a. Corbin Russwin; ASSA ABLOY

2.6 MANUAL FLUSH BOLTS

- A. Manual Flush Bolts: ANSI/BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Adams Rite Manufacturing Company, an ASSA ABLOY Group company
 - b. Allegion plc
 - c. Standard Metal Hardware Manufacturing LTD
 - d. Trimco
 2. Basis-of-Design Product: Subject to compliance with requirements, provide ASSA ABLOY or comparable product by one of the following:
 - a. Adams Rite Manufacturing Company, an ASSA ABLOY Group company
 - b. Allegion plc
 - c. Standard Metal Hardware Manufacturing LTD
 - d. Trimco

2.7 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Pyramid key system
 - a. Allegion plc
 - b. Arrow USA; an ASSA ABLOY Group company
 - c. ASSA, Inc.
 - d. BEST Access Solutions, Inc.; dormakaba USA Inc.
 - e. Cal-Royal Products, Inc
 - f. Corbin Russwin, Inc.; an ASSA ABLOY Group company
 - g. Hager Companies
 - h. Medeco Security Locks; an ASSA ABLOY Group company
 - i. PAMEX Inc.
 - j. PDQ Industries, Inc.
 - k. SARGENT Manufacturing Company; ASSA ABLOY
 - l. STANLEY; dormakaba USA, Inc.
 - m. Yale Security Inc; ASSA ABLOY
- B. Standard Lock Cylinders: ANSI/BHMA A156.5, Grade 1 permanent cores; face finished to match lockset.
 1. Core Type: Interchangeable.
- C. High-Security Lock Cylinders: ANSI/BHMA A156.30, Grade 1 permanent cores that are removable; face finished to match lockset.
 1. Type M, mechanical Type E, electrical.
- D. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- E. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.8 KEYING

- A. Keying System: Factory registered, complying with guidelines in ANSI/BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.
 1. Existing System:
 - a. Master key or grand master key locks to Owner's existing system.
 - b. Re-key Owner's existing master key system into new keying system.
- B. Keys: Brass.
 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: "DO NOT DUPLICATE."

2.9 SURFACE CLOSERS

- A. Surface Closers: ANSI/BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide DC8000 Hold Open Closer by Corbin Assa Abloy
 - a. Allegion plc
 - b. Arrow USA; an ASSA ABLOY Group company
 - c. Cal-Royal Products, Inc
 - d. Corbin Russwin, Inc.; an ASSA ABLOY Group company
 - e. Design Hardware; Mesker Openings Group; dormakaba
 - f. dormakaba USA Inc.
 - g. Hager Companies
 - h. INOX; Unison Hardware, Inc

- i. Norton Door Controls; ASSA ABLOY
- j. PAMEX Inc.
- k. Rixson Specialty Door Controls; ASSA ABLOY
- l. SARGENT Manufacturing Company; ASSA ABLOY
- m. STANLEY; dormakaba USA, Inc.
- n. Yale Security Inc; ASSA ABLOY

2.10 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: ANSI/BHMA A156.16.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Linnea 304 Grade Stainless Steel 1 Inch Diameter Floor Mount Door Stop or comparable product by one of the following:
 - a. Baldwin; part of the Spectrum Brands Hardware and Home Improvement Group (HHI)
 - b. Cal-Royal Products, Inc
 - c. Hager Companies
 - d. Trimco

2.11 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: ANSI/BHMA A156.6; fabricated from 0.050-inch- thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Rockwood Manufacturing Company; ASSA ABLOY Accessories and Door Controls Group, Inc.; ASSA ABLOY

2.12 FABRICATION

- A. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and ANSI/BHMA A156.18.
- B. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended; however, aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.
 - 1. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
 - 2. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.13 FINISHES

- A. Provide finishes complying with ANSI/BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.
- B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

3.3 INSTALLATION OF DOOR HARDWARE

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's 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. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule, but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches of door height greater than 90 inches.
- E. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with permanent cores as directed by Owner.
 - 2. Furnish permanent cores to Owner for installation.
- F. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

3.4 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.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
 - 2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant is to examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

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

3.7 DEMONSTRATION

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

3.8 DOOR HARDWARE SCHEDULE

- A. Hardware Set I: (Exterior)
 - 1. Grade 1 Lockset
 - 2. Lock Function Entry
 - 3. Deadbolt
 - 4. Continuous Hinges
 - 5. Closer
 - 6. Threshold w/ Weatherstripping
 - 7. Panic Device
 - 8. Astragal for double doors
 - 9. Floor Mounted Door Stop
- B. Hardware Set II: File
 - 1. Grade 1 Lockset
 - 2. Lock Function Storeroom
 - 3. 3 Hinges
 - 4. Door Closer
 - 5. 8" Kick Plate both Sides
 - 6. Floor Mounted Door Stop
- C. Hardware Set III: (Restroom)
 - 1. Grade 1 Lockset
 - 2. Keyed Function Privacy
 - 3. 3 Hinges
 - 4. Floor Mounted Door Stop
 - 5. 8" Kick Plate both Sides

END OF SECTION

DIVISION 09

FINISHES

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**SECTION 092216
NON-STRUCTURAL METAL FRAMING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019 (Reapproved 2025).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- 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; 2025.
- G. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2025.
- H. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- I. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2024.
- J. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- K. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2024.
- L. ASTM F594 - Standard Specification for Stainless Steel Nuts; 2024.
- M. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2018, with Editorial Revision (2020).

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel framing systems for interior partitions.
 - 2. Suspension systems for interior ceilings and soffits.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE**PART 2 PRODUCTS****2.1 PERFORMANCE REQUIREMENTS**

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
 - 2. Protective Coating: ASTM A653/A653M, G40 , hot-dip galvanized unless otherwise indicated.

- B. Studs and Tracks: ASTM C645. Use either conventional steel studs and tracks or embossed, high-strength steel studs and tracks.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
 - 2. Minimum Base-Steel Thickness: 0.0190 inch .
 - 3. Depth: As indicated on Drawings .
- C. Slip-Type Head Joints: Where indicated, provide the following:
 - 1. Single Long-Leg Track System: ASTM C645 top track with 2-inch- deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
- D. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
- E. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-steel thickness, with minimum 1/2-inch- wide flanges.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
 - 2. Depth: 1-1/2 inches .
 - 3. Clip Angle: Not less than 1-1/2 by 1-1/2 inches , 0.068-inch- thick, galvanized steel.
- F. Hat-Shaped, Rigid Furring Channels: ASTM C645.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
 - 2. Minimum Base-Steel Thickness: 0.0179 inch .
 - 3. Depth: As indicated on Drawings .
- G. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
 - 2. Configuration: Asymmetrical or hat shaped.
- H. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges.
 - 1. Depth: As indicated on Drawings .
 - 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch .
 - 3. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
- I. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches , wall attachment flange of 7/8 inch , minimum uncoated-steel thickness of 0.0179 inch , and depth required to fit insulation thickness indicated.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ClarkDietrich.
 - b. SCAFCO Steel Stud Company.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
- B. Hanger Attachments to Concrete:
 - 1. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 as appropriate for the substrate.
 - a. Uses: Securing hangers to structure.
 - b. Type: Torque-controlled, expansion anchor or .
 - c. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F 1941 , Class Fe/Zn 5, unless otherwise indicated.
 - d. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F593 , and nuts, ASTM F594 .
- C. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
- D. Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated .
- E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.
 - 1. Depth: 2-1/2 inches .
- F. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
 - 2. Steel Studs and Tracks: ASTM C645.
 - a. Minimum Base-Steel Thickness: 0.0179 inch 0.0296 inch .
 - b. Depth: As indicated on Drawings .
 - 3. Hat-Shaped, Rigid Furring Channels: ASTM C645, 7/8 inch deep.
 - a. Minimum Base-Steel Thickness: 0.0179 inch .
 - 4. Resilient Furring Channels: 1/2-inch- deep members designed to reduce sound transmission.
 - a. Configuration: Asymmetrical or hat shaped.

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D226/D226M, Type I (No. 15 asphalt felt), nonperforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 - 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
 - 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
- E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLING CEILING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 - 1. 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.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard 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 limits established by referenced installation standards .
 - 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

5. Do not attach hangers to steel roof deck.
 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- E. Seismic Bracing: Sway-brace suspension systems with hangers used for support .
- F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION

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**SECTION 092900
GYPSUM BOARD****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.
- B. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- C. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
- D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2025.
- E. 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.
- F. 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.
- G. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- H. ASTM C1288 - Standard Specification for Fiber-Cement Interior Substrate Sheets; 2023.
- I. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2025.
- J. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2024.
- K. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- L. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- M. ASTM E413 - Classification for Rating Sound Insulation; 2022.

1.2 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.
 - 2. Tile backing panels.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. CertainTeed Gypsum; CertainTeed M2Tech Mold and Moisture Resistant Type X Gypsum Board.
 - b. Georgia-Pacific Gypsum LLC.
 - c. National Gypsum Company; Gold Bond Brand XP Wallboard
 - d. USG Corporation; USG Sheetrock® Brand EcoSmart Panels Mold Tough® Firecode® X
2. Core: As indicated .
 3. Long Edges: Tapered.
 4. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D 3274.

2.4 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. James Hardie Building Products, Inc.
 - b. National Gypsum Company.
 - c. USG Corporation.
 2. Thickness: 5/8 inch .
 3. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D 3274.

2.5 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet .
 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (control) joint.

2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:
 1. Interior Gypsum Board: Paper.
 2. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound .
- D. Joint Compound for Tile Backing Panels:
 1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.7 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E90.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Hilti, Inc.
 - b. USG Corporation.
- D. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 EXECUTION

3.1 APPLYING AND FINISHING PANELS

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Comply with ASTM C840.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- E. Prefill open joints and damaged surface areas.
- F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated .
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
 3. Level 5: Abuse Resistant Areas .
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- H. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.2 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

3.3 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION

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**SECTION 093013
CERAMIC TILING****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Porcelain tile.
 - 2. Glazed wall tile.
 - 3. Stone thresholds.
 - 4. Tile backing panels.
 - 5. Metal edge strips.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."
- C. Face Size: Actual tile size, excluding spacer lugs.
- D. Module Size: Actual tile size plus joint width indicated.

1.4 REFERENCE STANDARDS

- A. ANSI A108.01 - General Requirements: Structures, Substrates, and Preparation of Tile; 2023.
- B. ANSI A108.02 - General Requirements: Workmanship for Tile Installation; 2023.
- C. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.
- D. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.
- E. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.
- F. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2024).
- G. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.
- H. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).
- I. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.
- J. ANSI A108.12 - Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2023.

- K. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2021).
- L. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.
- M. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.
- N. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2017 (Reaffirmed 2022).
- O. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.
- P. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2025.
- Q. ASTM C241/C241M - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic; 2021.
- R. ASTM C503/C503M - Standard Specification for Marble Dimension Stone; 2023.
- S. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2025.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For tile, grout, and accessories involving color selection.

1.6 INFORMATIONAL SUBMITTALS

1.7 QUALITY ASSURANCE

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
 - 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
 - 2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.

- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
1. Stone thresholds.
 2. Waterproof membrane.
 3. Crack isolation membrane.
 4. Cementitious backer units.
 5. Metal edge strips.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS

- A. Ceramic Tile Type: CFT-1 porcelain tile.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Olean; a division of Dal-Tile Corporation.
 - b. Crossville, Inc.
 2. Certification: Tile certified by the Porcelain Tile Certification Agency.
 3. Face Size: 12 x 24 .
 4. Thickness: 3/8 inch .
 5. Face: Plain with square or cushion edges .
 6. Dynamic Coefficient of Friction: Not less than 0.42.
 7. Tile Color, Glaze, and Pattern: As selected by Architect from manufacturer's full range .
 8. Grout Color: As selected by Architect from manufacturer's full range .
 9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 - a. Base Cap: Surface bullnose, module size .
 - b. External Corners: Surface bullnose, module size same as adjoining flat tile .
 - c. Internal Corners: Field-buttet square corners.
 - d. Tapered Transition Tile: Shape designed to effect transition between thickness of tile floor and adjoining floor finishes of different thickness, tapered to provide reduction in thickness from 1/2 to 1/4 inch across nominal 4-inch dimension.
- B. Ceramic Tile Type: CT-1 Glazed wall tile.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Olean; a division of Dal-Tile Corporation.
 - b. Daltile.
 2. Module Size: 4-1/4 by 4-1/4 inches .
 3. Thickness: 5/16 inch.

4. Face: Plain with modified square edges or cushion edges .
5. Finish: Bright, opaque glaze.
6. Tile Color and Pattern: As selected by Architect from manufacturer's full range .
7. Tile Height: Tile to ceiling unless noted otherwise.
8. Grout Color: As selected by Architect from manufacturer's full range .
9. Mounting: Factory, back mounted.
10. Mounting: Pregrouted sheets of tiles are factory assembled and grouted with manufacturer's standard white silicone rubber.
11. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 - a. Base for Thinset Mortar Installations: Straight, module size 4-1/4 by 4-1/4 inches .
 - b. Wainscot Cap for Thinset Mortar Installations: Surface bullnose, module size 6 by 6 inches 6 by 2 inches .
 - c. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
 - d. External Corners for Portland Cement Mortar Installations: Bullnose shape with radius of at least 3/4 inch unless otherwise indicated.
 - e. External Corners for Thinset Mortar Installations: Surface bullnose, same size as adjoining flat tile.
 - f. Internal Corners: Field-butt square corners. For coved base and cap use angle pieces designed to fit with stretcher shapes.

2.4 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.
- B. Marble Thresholds: ASTM C503/C503M, with a minimum abrasion resistance of 10 according to ASTM C1353 or ASTM C241/C241M and with honed finish.
 1. Description: Uniform, fine- to medium-grained white stone with gray veining.
 2. Description: Match Architect's sample.

2.5 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 or ASTM C1325, Type A, in maximum lengths available to minimize end-to-end butt joints.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Georgia-Pacific Gypsum LLC.
 - b. USG Corporation.
 2. Thickness: 1/4" or As indicated.

2.6 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thinset): ANSI A118.11.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bonsal American, an Oldcastle company.
 - b. Bostik, Inc.
 - c. LATICRETE SUPERCAP, LLC.
 - d. MAPEI Corporation.
 2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
 3. Provide prepackaged, dry-mortar mix combined with acrylic resin liquid-latex additive at Project site.

2.7 GROUT MATERIALS

- A. High-Performance Tile Grout: ANSI A118.7.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bonsal American, an Oldcastle company.
 - b. Bostik, Inc.
 - c. LATICRETE SUPERCAP, LLC.
 - d. MAPEI Corporation.
 - 2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.
 - 3. Polymer Type: Acrylic resin in liquid-latex form for addition to prepackaged dry-grout mix.
- B. Grout for PregROUTed Tile Sheets: Same product used in factory to pregROUT tile sheets.

2.8 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shaped, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless steel, ASTM A276/A276M or ASTM A666, 300 Series exposed-edge material.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Schluter Systems L.P.

2.9 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproof membrane by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION OF CERAMIC TILE

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors consisting of tiles 8 by 8 inches or larger.
 - c. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Ceramic Mosaic Tile: 1/8 inch.
 - 2. Quarry Tile: 3/8 inch.
 - 3. Glazed Wall Tile: 1/8 inch.
 - 4. Porcelain Tile: 1/4 inch .
- H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- I. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.

- J. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 - 1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in modified dry-set mortar (thinset).
- K. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.

3.4 INSTALLATION OF TILE BACKING PANEL

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use modified dry-set mortar for bonding material unless otherwise directed in manufacturer's written instructions.

3.5 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.6 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION

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**SECTION 095113
ACOUSTICAL PANEL CEILINGS****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes acoustical panels and exposed suspension systems for ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete at ceilings.

1.3 DEFINITIONS

- A. LR: Light Reflectance coefficient.
- B. NRC: Noise Reduction Coefficient.

1.4 REFERENCE STANDARDS

- A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019 (Reapproved 2025).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
 - 1. Ceiling suspension system members.
 - 2. Method of attaching hangers to building structure.
- C. Maintenance Data: For finishes to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Source Limitations:
 - 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 - 2. Suspension System: Obtain each type through one source from a single manufacturer.
- B. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and

ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

1.9 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

PART 2 PRODUCTS

2.1 ACOUSTICAL PANELS, GENERAL

- A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
- B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
 1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

2.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

- A. Acoustical Ceiling Units (ACU): ASTM E1264, and the following requirements. Acoustical ceiling units shall be equivalent to acoustical ceiling units as manufactured by Armstrong, unless noted otherwise. The manufacturer and design listed are to define the appearance and physical characteristics of the acoustical unit, which will be required.
 1. Acoustical Ceiling Units - Type ACU1 (Lay-in Panels)
 - a. Manufacturer: Armstrong.
 - b. Type: Fine Fissured (medium texture).
 - c. Design: School Zone #1728.
 - d. Color: White.
 - e. NRC Range: 70 (ASTM C423).
 - f. CAC Range: 35 minimum (CISCA AMA1-II and ASTM E413).
 - g. Light Reflectance: LR 0.85 minimum.
 - h. Flame Spread: 0-25 (ASTM E84), Class A (ASTM E1264).
 - i. Edge Condition: Standard Reveal edge.
 - j. Size: 24 inches by 24 inches by 5/8 inch thick or 24" x 48" x 5/8 inch thick as indicated in documents.
 - k. Treatments: "BioBlock Plus", "HumiGuard plus".
 - l. Suspension Systems: Type SS-1.
 2. Acoustical Ceiling Units - Type ACU2 (Lay-in Panels).
 - a. Manufacturer: Armstrong.
 - b. Type: Fine textured, square lay-in.
 - c. Design: Ceramaguard.
 - d. Color: White.
 - e. NRC Range: 0.70.
 - f. CAC Range: 35 (ASTM C423).
 - g. Light Reflectance: LR .86 minimum.
 - h. Flame Spread: 0-25 (ASTM E84), Class A (ASTM E1264).
 - i. Edge Condition: Standard Reveal edge.
 - j. Size: 24 inches by 24 inches by 5/8 inch thick.
 - k. Treatments: "HumiGuard Max"; "BioBlock Plus."

I. Suspension System: SS-1.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- B. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
 - 1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
 - 1. Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.
 - 2. Nickel-Copper-Alloy Wire: ASTM B 164, nickel-copper-alloy UNS No. N04400.
 - 3. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch-diameter wire.
- E. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.
- F. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- G. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.
- H. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees.
- I. Impact Clips: Where indicated, provide manufacturer's standard impact-clip system designed to absorb impact forces against acoustical panels.

2.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- B. Acoustical Ceiling Suspension Systems: Suspension systems shall be equivalent to acoustical ceiling suspension systems as manufactured by Armstrong, unless noted otherwise. The manufacturer and design listed are to define the appearance and physical characteristics of the acoustical ceiling suspension, which will be required. ASTM C635 and the following requirements:
 - 1. Acoustical Ceiling Suspension System - Type SS-1 (Exposed Grid)
 - a. Manufacturer: Armstrong.
 - b. Design: "Prelude ML" System.
 - c. Typical Exposed Grid Size: 24 inches by 24 inches or 24 inches by 48 inches as indicated in documents.
 - d. Structural Classification: Heavy Duty.
 - e. Exposed Tee Width: 15/16 inch.
 - f. Main Runners: No.7301, double web.
 - g. Cross Tees 2 feet span): No.XL7328, double web.
 - h. Cross Tees 4 feet span): No.XL7340, double web.
 - i. Material (Main Runners and Cross Tees): Hot-dipped galvanized steel.
 - j. Material (Cap Cover): Hot-dipped galvanized steel.
 - k. Color (Cap Cover): To match acoustical ceiling unit color.

- I. Wall or Edge Moldings: Manufacturer's standard in color to match acoustical ceiling unit color, unless special ceiling moldings specified.
- C. Wide-Face, Capped, Double-Web Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A653/A653M, not less than G30 coating designation, with prefinished 15/16-inch- wide metal caps on flanges.
 1. Structural Classification: Intermediate-duty system.
 2. End Condition of Cross Runners: Override (stepped) type.
 3. Face Design: Flat, flush.
 4. Cap Material: Steel cold-rolled sheet.
 5. Cap Finish: Painted white.

2.5 METAL EDGE MOLDINGS AND TRIM

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- B. Products: Subject to compliance with requirements, provide one of the following:
 1. Armstrong World Industries, Inc.
 2. Chicago Metallic Corporation.
 3. USG Interiors, Inc.
- C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.
 1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.
 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
 3. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.

4. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 5. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 6. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both structure to which hangers are attached and type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 7. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, post-installed mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 8. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 9. Do not attach hangers to steel deck tabs.
 10. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 11. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 12. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or post-installed anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. Arrange directionally patterned acoustical panels as follows:
 - a. Install panels in a basket-weave pattern.
 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
 3. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 4. Install hold-down clips in areas indicated, in areas required by authorities having jurisdiction, and for fire-resistance ratings; space as recommended by panel manufacturer's written instructions, unless otherwise indicated.
 5. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

**SECTION 096501
LUXURY VINYL PLANK AND TILE****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine; 2025.
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2025.
- C. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials; 2021a, with Editorial Revision.
- D. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.
- E. ASTM F925 - Standard Test Method for Resistance to Chemicals of Resilient Flooring; 2013 (Reapproved 2020).
- F. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2022.
- G. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.
- H. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.
- I. ISO 9001 - Quality Management Systems — Requirements; 2015, with Amendment (2024).
- J. ISO 14001 - Environmental Management Systems — Requirements with Guidance for Use; 2015, with Amendment (2024).

1.2 SUMMARY

- A. Section includes: Solid Vinyl Floor Tile

1.3 REFERENCES

- A. ASTM International:
 - 1. F 1700 Standard Specification for Solid Vinyl Floor Tile
 - 2. E 648 Standard Test Method for Critical Radiant Flux of Flooring Systems using a Radiant Energy Source
 - 3. E 662 Standard Test Method for Specific Density of Smoke Generated by Solid Materials
 - 4. F 970 Standard Test Method for Static Load Limit
 - 5. D 2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
 - 6. DIN 51130 Determination of the anti-slip property - Workrooms and fields of activities with slip danger, walking method - Ramp test

1.4 SUBMITTALS

- A. Product Data: Submit product data, including manufacturer's specification summary sheet for specified products
- B. Manufacturers Certifications:
 - 1. Provide manufacturer's factory location for the specified product(s)
 - 2. Provide ISO 9001 certification.
 - 3. Provide ISO 14001 certification.
 - 4. Provide OSHAS 18001 certification.
- C. Shop Drawings: Submit shop drawings showing layout, seaming diagram, finish colors, designs and textures.
- D. Samples: Submit 6" selection and verification samples for finishes, colors, designs and textures

- E. Quality Assurance Submittals: Submit the following:
 - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- F. Submit the following:
 - 1. Maintenance Data: Maintenance data for installed products in accordance with Division 1 sections. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: Warranty documents specified herein
 - 3. Qualification Data
 - a. For a qualified resilient flooring Installer specified herein

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Fire Performance characteristics: Provide resilient plank and/or tile flooring with the following fire performance characteristics as determined by testing in accordance with ASTM methods indicated below by a certified testing laboratory or testing and inspecting agency acceptable to authorities having jurisdiction.
 - 2. Critical Radiant Flux Class 1 Rating per ASTM E648
 - 3. Smoke Density; Less than 450 per ASTM E662
- B. Single Source Responsibility: Obtain vinyl floor covering and adhesive from a single supplier.
- C. Manufacturer Qualifications:
 - 1. ISO 9001 Certified
 - 2. ISO 14001 Certified
 - 3. OHSAS 18001 Certified
 - 4. At least ten years' active experience in the manufacture and marketing of commercial flooring
- D. Installer Qualifications:
 - 1. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installing work similar to that required for this project.
 - 2. At least five years' experience in the installation of resilient flooring
 - 3. Experience on at least five projects of similar size, type and complexity of current project
 - 4. Employer of tradesmen for current project who are competent in techniques required by manufacturer for resilient flooring installation indicated.
- E. Pre-Installation Meetings: Conduct pre-installing meeting to confirm project requirements, substrate conditions, manufacturer's installation instructions and warranty requirements comply with requirements in Division 1

1.6 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with requirements in Division 1
- B. Ordering: Comply with manufacturer's ordering and lead-time requirements to avoid construction delays
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact
- D. Storage and Protection: Material shall be stored in areas that are enclosed and weather tight with the permanent HVAC system set at a temperature of 65-85 degrees Fahrenheit (18° to 29° Celsius) for a minimum of 48 hours prior to commencement of installation.

1.7 PROJECT CONDITIONS

- A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, areas to receive floor covering shall be clean, fully enclosed and weather tight with permanent HVAC system set to 65-85 degrees Fahrenheit (18° to 29° Celsius) for 48 hours before installation, during installation and for 48 hours after installation.

- B. The temperature of the space shall be kept at a minimum of 50° Fahrenheit (10° Celsius) continually after installation. The floor covering material and adhesive shall be conditioned in the same manner. Existing Conditions: (specify existing conditions affecting product use and installation)

1.8 SEQUENCING AND SCHEDULING

- A. Finishing operations: Install floor covering after finishing operations; including painting and ceiling operations have been completed.
- B. Concrete curing and drying: Do not install floor covering over concrete substrates until substrates have cured and are dry to bond with adhesive as determined in test methods specified in ASTM F710

1.9 WARRANTY

- A. Manufacturer's Materials Warranty: Submit, for owner's acceptance, manufacturer's standard warranty document.
- B. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.
 - 1. Total Warranty Period: 12-year limited warranty commencing on the date of substantial completion.
 - 2. For materials: 1 year from date of substantial completion including 100% labor costs.
 - 3. For surface wear 12 years from the date of substantial completion including pro-rated labor costs (see warranty for details)

1.10 MAINTENANCE

- A. Extra materials: Deliver to the owner extra materials as the products to be installed. Package products with protective covering or in original cartons and identify with descriptive labels. Comply with Division 1 Closeout Submittals (maintenance materials) Section
 - 1. Quantity: Furnish quantity of floor covering material equal to 5% of the amount to be installed
 - 2. Delivery, Storage and Protection: Comply with the owner's requirements for delivery, storage and protection of extra materials.
- B. Maintenance of finished floor covering shall be according to maintenance instructions.

PART 2 PRODUCTS

2.1 COMMERCIAL RESILIENT/VINYL TILE FLOORING

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide Interface Luxury Vinyl Tile
- B. Substitution Limitations:
 - 1. All other manufacturers: Submit formal substitution request prior to bid in accordance with Division 01 General Requirements, section 012500 – "Substitution Procedures"
 - 2. Approval by Architect of other manufacturers does not relieve Contractor of responsibility to provide products which comply with all requirements of this specification.
- C. Product Description: Solid Vinyl Tile flooring
 - 1. Overall Thickness: Not less than 0.10 inches
 - 2. Wear Layer Thickness: Not less than 28 mil
 - 3. Maximum static load must exceed 900 PSI (modified)
 - 4. Adhesive Method: as recommended per manufacturer's installation instructions to ensure proper installation and performance.
 - 5. FloorScore® certified
 - 6. Declare ingredient label.
 - 7. Third Party Certified EPD
 - 8. Self-Declared HPD
 - 9. Color and Pattern: As selected from LVT manufacturer's standard colors and patterns.
- D. Performance Criteria:

1. Description: Solid Vinyl Tile
2. Dimensional Stability per ASTM F 2199
3. Recovery from Long Term Indentation per ASTM F970 modified – 1,000psi
4. Determination of anti - slip properties DIN 51130 – R10
5. Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine – ASTM D2047
6. Chemical resistance per ASTM F925 – Excellent, results on request
7. Flexibility per ASTM F 137 – Pass
8. Fire Performance: ASTM E648; Class 1
9. Slab Moisture Tolerance
 - a. When Maximum Relative Humidity (RH) of 85% when tested according to ASTM F2170
 - b. Maximum moisture vapor emission rate of 6 pounds of water per 1,000 sq feet in 24 hours when tested according to ASTM F1869

2.2 RELATED MATERIALS

- A. Substrate preparation and testing: Comply with ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- B. Resilient floor covering accessories: Refer to other Division 9 sections for resilient floor covering accessories.
- C. Expansion joint covers: Refer to other specification section for expansion joint covers to be used with resilient floor covering.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's requirements as published in Technical Manual
- B. Adhesive: Luxury Vinyl Flooring adhesive shall be used for installation of LVT per ASTM F1869 6 lbs. maximum MVER or ASTM F2170 up to 85% maximum relative humidity

3.2 EXAMINATION

- A. Site verification of conditions: Confirm substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.
- B. Material inspection: In accordance with manufacturer's installation requirements, visually inspect materials prior to installing and during installation, if visual defect is noticed STOP WORK and contact manufacturer. Material with visual defects should not be installed.
- C. Permanent HVAC systems are installed and operable.
- D. Other work, including overhead work, that could cause damage, dirt, dust, debris or otherwise interrupt installation has been completed or suspended.

3.3 PREPARATION

- A. Acclimate product to the installation site conditions by delivering all materials, including adhesives and maintenance products to the job site at least 48 hours prior to starting installation. Store all products at 65°F to 85°F (18°C to 29°C) for 48 hours prior to installation.
- B. The space where flooring is to be installed shall be fully enclosed and the permanent HVAC system shall be operational prior to installing flooring. The temperature shall be 65° to 85° Fahrenheit (18° to 29° Celsius) for 48 hours before installation, during installation and for 48 hours after installation. The temperature of the space shall be kept at a minimum of 50° Fahrenheit (10° Celsius) continually after installation.
- C. Adjacent surface protection: Protect adjacent work areas and finish surfaces from damage while installing.
- D. Surface preparation, General: Prepare substrate in accordance with manufacturer's instructions.

- E. Substrate: Prepare substrate to be free of paint, old adhesive, sealers, coatings, finishes, dirt, film forming curing compounds, or other substances which may affect the adhesion of floor covering to the substrate
- F. Use trowelable concrete based leveling and patching compound with the same moisture vapor tolerance as the adhesive to fill depressions, holes, cracks, grooves or other irregularities in the substrate.
 - 1. Concrete substrate: Reference Standard ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - a. Concrete Moisture Test: Per ASTM F710 section 5
 - 1) Persons or testing agencies with experience in concrete moisture testing shall perform moisture tests on concrete regardless of its age or grade level or history of use, with a minimum of three tests for the first 1,000 sq feet and one additional test for each 1,000 square feet or fraction thereof. A diagram of the area showing the location and results of each test shall be dated and submitted to the architect, designer, general contractor and/or end user. If the test results exceed the floorcovering manufacturer's expressed limits, installing shall not commence until results conform to limits.
 - b. Concrete pH Test
 - 1) Perform pH tests on concrete regardless of its age or grade level or history of use. Readings below 7.0 and above 10.0 can adversely affect resilient flooring or adhesives or both.
 - 2. Wood Substrates: Per ASTM F 1482, wood subfloor/underlayment assemblies shall be double layer construction, with a total thickness of not less than 1"
 - a. There shall be minimum 18 inches of well-ventilated air space beneath all wood subfloors. Crawl spaces shall be insulated and protected by a moisture vapor barrier.
 - b. Suitable underlayment panels include Artic (Baltic) Birch, A/C grade plywood with sanded face, or other underlayment grade exterior plywood warranted by the underlayment manufacturer.
 - c. Do not install over "sleeper" underlayment systems or wood underlayment installed over concrete.
 - d. Do not install over Luan panels, CCA Plywood, plywood with knots, underlayment made from pine or other soft woods, particle board, Masonite® or other hardboard underlayment, hardwood flooring, textured or cushioned flooring, treated or otherwise coated wood material or other uneven or unstable substrates. Unacceptable surfaces shall be covered by 1/4" or thicker panel underlayment.
 - e. Refer to Division 6 Carpentry sections for wood subfloor construction.
 - f. Refer to LVT installation instructions for information regarding preparation of wood substrates.

3.4 INSTALLING

- A. Refer to manufacturers installation guide for detailed specifications on installing LVT with regard to job site conditions, substrate testing and preparation, installation over expansion joints, adhesive and trowel selection and application, layout and installing, clean up and protection of new floor covering after installing.
- B. Finish Floor Covering Designs: As selected by Architect, Designer or Owner

3.5 CLEANING

- A. Cleaning: See LVT maintenance guide
- B. Remove temporary coverings and protection of adjacent work areas.
- C. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance
- D. Remove construction debris from project site and legally dispose of

3.6 PROTECTION

- A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of substantial completion.
- B. Keep foot traffic off new floor covering for first 24 hours.
- C. Keep furniture, fixtures and rolling traffic off for first 48 hours.

3.7 INITIAL MAINTENANCE PROCEDURES

- A. Refer to cleaning and maintenance guides for correct procedures etc.
- B. Wait 5 days after installation is completed and thoroughly clean the floor.
- C. Dustmop the floor to ensure all loose dirt and/or grit is removed.
- D. Mix a of pH neutral solution in a clean container with warm water at the manufacturers recommended dilution rate.
- E. Mop or scrub the floor with a microfiber pad. If desired a 3M™ RED Buffer Pad #5100 or equivalent can be used
- F. Rinse completely and thoroughly with clean, cool, tap water. Do not flood the floor.
- G. Repeat rinsing as many times as necessary to remove all traces of soil and cleaning solution.
- H. Take up rinse water and permit flooring to dry completely.
- I. NEVER USE BLACK OR BROWN PADS ON LUXURY VINYL TILE FLOORING

END OF SECTION

**SECTION 096513
RESILIENT BASE AND ACCESSORIES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Thermoset-rubber base (See Interior Design Product Specifications)
 - 2. Resilient Base (See Interior Design Product Specifications)
 - 3. Rubberd molding accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials , from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 5 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.5 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F , in spaces to receive resilient products during the following periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F .
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 PRODUCTS**2.1 INSTALLATION MATERIALS**

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install resilient products until materials are the same temperature as space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from marks, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION

**SECTION 099000
PAINTING AND COATING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. 29 CFR 1910 - Occupational Safety and Health Standards; Current Edition.
- B. 29 CFR 1910.1000 - Air Contaminants; Current Edition.
- C. ACGIH - Ultraviolet Radiation: TLV(R) Physical Agents 7th Edition Documentation; 2010.
- D. SSPC-PA 1 - Shop, Field, and Maintenance Coating of Metals; 2024, with Errata (2025).
- E. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- F. SSPC-SP 2 - Hand Tool Cleaning; 2024.
- G. SSPC-SP 3 - Power Tool Cleaning; 2024.

1.2 RELATED DOCUMENTS

- A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications and Addenda issued prior to the execution of the Contract, other documents listed in the Agreements and Modifications issued after the execution of the Contract shall apply to the work in this Section. The general requirements for this work are located in Division 01 of the Specifications.

1.3 DESCRIPTION OF WORK

- A. The extent of painting work is shown on the drawings and schedules, and as herein specified.
- B. The work includes painting and finishing of interior and exterior exposed items and surfaces throughout the project, except as otherwise indicated. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of the specifications.
- C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, varnishes, special coatings, sealers, and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- D. Paint all exposed surfaces whether or not colors are designated in "schedules," except where the material is specifically noted not to be painted or to be finished natural. Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not scheduled or indicated, the Architect will make selections from standard colors and finishes available for the coating systems specified.
- E. Mechanical and Electrical Work: The field-applied painting of the exposed surfaces of mechanical and electrical work shall be provided under this Section.
 - 1. In finished areas, unless otherwise specified or indicated, paint all "unfinished" conduits, junction boxes, piping, hangers, ductwork, and other mechanical and electrical equipment with color and texture to match adjacent surfaces.
 - 2. In unfinished areas, unless otherwise specified or indicated, leave the conduits, junction boxes, piping, hangers, ductwork, and other mechanical and electrical equipment in original finish, except touch up any scratches or markings.
 - 3. Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
 - 4. Do not paint over nameplates.
 - 5. Paint the inside of all ductwork, where visible behind louvers, grilles, and diffusers for a minimum of 18" or beyond sight line, whichever is greater, with primer and one coat of matt black (non-reflecting) paint.
 - 6. Paint disconnect switches for fire alarm system and exit light systems in red enamel paint.
 - 7. Unless specified otherwise, paint red all fire protection piping and sprinkler lines with red enamel paint in finished and unfinished areas. Keep sprinkler heads free of paint.

8. Unless specified otherwise, paint all natural gas piping with yellow enamel paint in finished and unfinished areas.
 9. Backprime and paint face and edges of plywood service panels for telephone and electrical equipment before installation with paint color to match walls. Leave equipment in original finish, except for touch-up as required, and paint conduits, mounting accessories, and other unfinished items.
 10. Unless factory finished, paint exterior steel electrical light standards.
- F. Painting Work Provided Under Other Sections of These Specifications
1. All field-applied painting work not provided under this section of the specifications shall be provided in strict accordance with this painting specification. Refer other specifications, as required. The following are a few examples of painting work performed elsewhere.
 2. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal, hollow metal work, and similar items. Also, for fabricated components such as pre-finished casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.
- G. Items Not To Be Painted
1. Unless specified otherwise, the following is a partial list of the types of items that are not to receive field-applied painting, whether the field-applied painted is provided under this section or some other section of these specifications.
 2. Prefinished Surfaces: Items such as face brick, ceramic surfaces, special finished concrete masonry units, plastic surfaces, vinyl or rubber surfaces, glass surfaces, fabrics, laminated plastic clad surfaces, natural stones, manufactured stones, porcelain enamel surfaces, vinyl wall covering, acoustical materials, and items specified with a pre-finished surface. When any pre-finished surface is required to be painted, the drawings or the specifications will clearly identify the surface to receive field-applied painting.
 3. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing is specified for such items as (but not limited to) metal toilet enclosures, acoustic materials, casework, mechanical and electrical equipment, light fixtures, switchgear and distribution cabinets, elevator entrance frames, elevator doors and equipment.
 4. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.
 5. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar factory finished metal materials will not require finish painting, unless indicated otherwise..
 6. Labels: Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.4 APPLICABLE STANDARDS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Refer Section 014200.
1. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
 - a. ACGIH TLV Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices
 2. CODE OF FEDERAL REGULATIONS (CFR)
 - a. 29 CFR 1910.1000 Occupational Safety and Health Standards (Air Contaminants)
 - b. 29 CFR 1910.1025 Occupational Safety and Health Standards (Lead)
 3. FEDERAL STANDARDS (FED-STD)
 - a. FED-STD 313 Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities
 4. FEDERAL SPECIFICATION (FS)
 - a. FS TT-P-00791 Putty: Linseed-Oil Type, (For Wood-Sash-Glazing)
 - b. FS TT-T-291 Thinner, Paint, Mineral Spirits, Regular and Odorless

5. STEEL STRUCTURES PAINTING COUNCILS (SSPC)
 - a. SSPC Paint-1 Shop, Field, and Maintenance Painting
 - b. SSPC Paint-3 A Guide to Safety in Paint Application
 - c. SSPC-SP 1 Solvent Cleaning
 - d. SSPC-SP 2 Hand Tool Cleaning
 - e. SSPC-SP 3 Power Tool Cleaning
 - f. SSPC SP6 Commercial Blast Cleaning
 - g. SSPC SP7 Brush-Off Blast Cleaning
 - h. SSPC SP10 Near-White Blast Cleaning
 - i. SSPC VIS1 Pictorial Surface Preparation Standards of Painting Steel Surfaces, Guide to

1.5 SUBMITTALS:

- A. Manufacturer's current printed product description, material safety data sheet (MSDS) and technical data sheets for each coating system. MSDS submittals shall meet the requirements of FED-STD 313. Detailed mixing, thinning and application instructions, minimum and maximum application temperature, and curing and drying times between coats for epoxy, moisture-curing polyurethane, and liquid glaze coatings. Detailed application instructions for textured coatings shall be provided.
- B. Submit evidence that the Contractor or his subcontractor has satisfactorily applied paint by airless spray at a minimum of two sites. Indicate the names and locations of the sites, and type and design of the equipment used, including safety devices.
- C. Certificates of Compliance: For each type of paint, coating, sealant or other product furnished, submit a certificate from the manufacturer stating that the product conforms to requirements of the referenced specification.
- D. If colors are not scheduled or indicated on the drawings, submit name of the proposed paint manufacturer, together with a complete line of color chips for Architect's selection of colors.
- E. In accordance with schedules, colors indicated on drawings, or Architect selection of colors, submit the following for each type of paint specified. On the back of each sample, indicate the material and application for each coat of each finish sample. Architect's review will be for color and texture only. Compliance with all other requirements is the responsibility of the Contractor.
 1. On 8" x 10" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit each sample as requested until acceptable sheen, color, and texture is achieved.
 2. On actual wood surfaces, provide two 4" x 8" samples of each natural (transparent) and stained wood finish as required. Label and identify each as to location and application.
 3. On concrete masonry, provide two 4" square samples of masonry for each type of finish and color, defining filler, prime and finish coat.
 4. On actual wall surfaces and other exterior and interior building components, duplicate painted finishes of the prepared samples. On at least 100 SF of surface as directed, provide full-coat finish samples until required sheen, color and texture is obtained; simulate finished lighting conditions for review of in-place work.

1.6 REGULATORY REQUIREMENTS

- A. Environmental Protection: In addition to requirements specified elsewhere for environmental protection, the Contractor shall provide coating materials that conform to the restrictions of the State and local Air Pollution Control Districts having jurisdiction. Notify the Architect of any paint specified herein which fails to conform to the Air Quality Management District Rules for the location of the project. In localities where the specified coating or paint is prohibited, the Contractor shall substitute acceptable coating systems which shall comply with the State and local requirements and which shall be as reviewed by the Architect.
- B. Lead Content: Materials shall not contain lead.
- C. Chromate Content: Do not use coatings containing zinc-chromate or strontium-chromate.

- D. Asbestos Content: Materials shall not contain asbestos.
- E. Materials shall not contain mercury or mercury compounds.
- F. Materials shall not contain free crystalline silica.
- G. Materials shall not contain human carcinogens or suspected human carcinogens.
- H. Interior Paints: Paints for interior use shall contain no mercurial mildewcide or insecticide.
- I. Volatile Organic Compound (VOC) Content: Paints shall comply with applicable state and local laws enacted to insure compliance with Federal Clean Air Standards and shall conform to the restrictions of the local air pollution control authority.

1.7 DELIVERY AND STORAGE

- A. Deliver materials in sealed, labeled containers bearing manufacturer's name and address, brand designation, manufacturer's directions including and warnings and special precautions, specification number, batch number, color and date of manufacture. Assign a certain room in the building for the exclusive use of storing painting materials and the mixing of paints. Paints and thinners shall be stored in accordance with the manufacturer's written directions, and as a minimum, stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors, and at a temperatures between 40 to 95 degrees Fahrenheit. Before moving paint materials into this area, furnish and lay a suitable protective covering over the entire floor area of the paint storage room. When use of the space is no longer needed, clean the room thoroughly, so that the final finishes reflect no evidence of the paint storage. Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills.

1.8 SAFETY METHODS

- A. Conform to the latest edition of Industrial Health and Safety Regulations issued by applicable Federal, State, and Local authorities having jurisdiction in regard to site safety (ladders, scaffolding, ventilation, etc.), Apply coating materials using safety methods and equipment in accordance with the manufacturer's recommendations and the following:
 - 1. Safety Methods Used During Coating Application: Comply with the requirements of SSPC PA 3.
 - 2. Toxic Materials: To protect personnel from over-exposure to toxic materials, conform to the most stringent guidance of:
 - a. The chemical manufacturer when using mineral spirits, or other chemicals. Use impermeable gloves, chemical goggles or face shield, and other recommended protective clothing and equipment to avoid exposure of skin, eyes, and respiratory system. Conduct work in a manner to minimize exposure of building occupants and the general public.
 - b. The appropriate OSHA standard in 29 CFR 1910.1025 for surface preparation on painted surfaces containing lead, zinc-chromate, strontium-chromate, asbestos, or other toxic ingredients.
 - c. 29 CFR 1910.1000.
 - d. Threshold Limit Values (R) of the American Conference of Governmental Industrial Hygienists as established by ACGIH TLV, or as required by a more stringent applicable regulation.
- B. Manufacturer's Material Safety Data Sheets (MSDS).

1.9 ENVIRONMENTAL CONDITIONS

- A. Exterior Coatings: Do not apply coating to surfaces during foggy or rainy weather, or under the following surface temperature conditions:
 - 1. Less than 5°F above the dew point;
 - 2. Below 50°F (for oil-based paints), and below 50°F (for latex paints).
 - 3. Over 95°F.

- B. Interior Coatings: Apply coatings when surfaces are dry and the following surface temperatures can be maintained:
 - 1. Between 65°F and 95°F during the application of enamels and varnishes;
 - 2. Between 50°F and 95°F during the application of other coatings.

1.10 COLOR SELECTION

- A. Colors of finish coats shall be as scheduled, indicated or specified. Where not scheduled, indicated, or specified, colors shall be as selected by the Architect. Manufacturers' names and color identification as scheduled are used for the purpose of color identification. The manufacturer's referenced named products are acceptable for use only if they conform to specified requirements. Comparable products of other manufacturers are acceptable, if the colors approximate the colors scheduled or indicated and the comparable product conforms to specified requirements.

1.11 WASTE MANAGEMENT AND DISPOSAL

- A. Paint, stain, and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from applicable State and Local government departments having jurisdiction.
- B. All waste materials shall be separated and recycled. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility. Materials that cannot be reused must be treated as hazardous waste and disposed of in a legal and appropriate manner.
- C. Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- D. To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground, the following procedures shall be strictly adhered to:
 - 1. Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
 - 2. Retain cleaners, thinners, solvents, and excess paint and place in designated containers and ensure proper disposal.
 - 3. Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - 4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - 5. Empty paint cans are to be dry prior to disposal or recycling (where available).
 - 6. Close and seal tightly partly used cans of materials, including sealant and adhesives containers, and store protected in well ventilated fire-safe area at moderate temperature.
- E. Set aside and protect surplus and uncontaminated finish materials not required by the Owner and deliver or arrange collection for verifiable re-use or re-manufacturing.

PART 2 PRODUCTS

2.1 COLORS AND FINISHES

- A. Paint colors and surface treatments are scheduled, indicated on the drawings, or specified. If colors and surface treatments are not scheduled, indicated on the drawings, or specified, they will be as selected by the Architect.
- B. Use representative colors when preparing samples for review.
- C. Final acceptance of colors will be from samples field applied at the jobsite.
- D. Color Pigments: Pure, non-fading, applicable types to suit the substrates and service indicated.
- E. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as

required. Notify the Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

2.2 MATERIAL QUALITY

- A. Provide the best quality grade of the various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard, best-grade product will not be acceptable.
- B. Unless specified otherwise, provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only within the paint manufacturer's recommended limits.
- C. The material scheduled, unless otherwise indicated, has been based on the use of PPG Industries (Pittsburgh) materials. Comparable materials of Sherwin Williams Company, Devoe Company, Pratt & Lambert Company, or Benjamin Moore Paint Company may be used. Comparable paint products will be compared to the percentage of solids by weight, sheen (gloss meter reading range), VOC, recommended Wet and Dry film thicknesses, and any anti-microbial properties of the paints specified. Only paint products equivalent to those specified shall be used on the project.
- D. The brand of paint, selected to be used, shall be used generally throughout the project. Brands shall not be mixed.

2.3 EXTERIOR COATING SYSTEMS

- A. Provide the following coating systems for the various substrates, as indicated. The coating systems noted as VOC are recommended to comply with most current federal, state, and regional regulations concerning allowable amounts of volatile organic compound (VOC) in coatings (paints, varnishes, etc.). Should any of the coating systems noted as VOC fail to meet the federal, states, or regional regulations, the paint manufacturer shall modify his coating as required to properly comply with these regulations. The Contractor shall provide VOC compliant coatings, where specified. On existing surfaces that have been previously painted and the painted finish requires no repairs or special preparation to properly receive the new painted finish, the 1st Coat (primer coat) may be omitted. Provide additional coats as required to provide the uniform color and texture as specified, scheduled, or selected by the Architect.
 - 1. Metals
 - a. Ferrous Metals (Solvent Base - Gloss Sheen - Alkyd-Oil Resin) VOC
 - 1) 1st Coat "Speedhide" Int/Ext Rust Inhibitive Primer (6-208, 6-212 Series). MWF 3.5 mils per coat.
 - 2) 2nd Coat "Speedhide" Gloss-Oil Int/Ext Enamel (6282 Series). MWF 4.0 mils per coat.
 - 3) 3rd Coat Same as 2nd Coat
 - (a) Inhibitive primer only required for "touch-up" if metal has shop applied prime coat.
 - b. Zinc Coated Metal (Solvent Base - Gloss Sheen - Alkyd-Oil Resin) VOC
 - 1) 1st Coat "Speedhide" Int/Ext Galvanized Steel Primer (6-209). MWF 3.6 mils per coat.
 - 2) 2nd Coat "Speedhide" Gloss-Oil Int/Ext Enamel (6282 Series). MWF 4.0 mils per coat.
 - 3) 3rd Coat Same as 2nd Coat
 - 2. Wood
 - a. Wood (Solvent Base - Gloss Sheen - Alkyd-Oil Resin) VOC
 - 1) 1st Coat "Speedhide" Exterior Wood Primer Deeptone Oil (6-19). MWF 4.0 mils per coat.
 - 2) 2nd Coat "Speedhide" Gloss Oil Int/Ext Enamel (6282 Series). MWF 4.0 mils per coat.
 - 3) 3rd Coat Same as 2nd Coat

PART 3 EXECUTION**3.1 PROTECTION OF AREAS AND SPACES**

- A. Prior to surface preparation and coating applications, remove hardware, hardware accessories, machined surfaces, plates, covers, lighting fixtures, public and private property, and other such items not to be coated that are in contact with surfaces to be coated. Following completion of painting, workmen skilled in the trades involved shall reinstall removed items. Restore surfaces contaminated by coating materials, to original condition and repair any damaged items.

3.2 SURFACE PREPARATION

- A. Remove dirt, splinters, loose particles, grease, oil, disintegrated coatings, and other substances deleterious to coating performance as specified for each substrate. Surfaces shall be prepared in a manner to properly receive the paints and coatings specified and in accordance with manufacturer's recommendations.

3.3 PREPARATION OF METAL SURFACES

- A. Ferrous Surfaces
 - 1. Shop-coated Surfaces and Small Areas That Contain Rust, Mill Scale and Other Foreign Substances: Solvent clean in accordance with SSPC-SP 1 to remove oil and grease. Where shop coat is missing or damaged, clean according to SSPC-SP 2, SSPC-SP 3, SSPC SP6, or SSPC SP10 and in accordance with coating manufacturer's recommendations and requirements. Brush-off blast the remaining surface in accordance with SSPC SP7.
 - 2. Surfaces With More Than 20 Percent Rust, Mill Scale, and Other Foreign Substances: Clean entire surface in accordance with SSPC SP6 or SSPC SP10.
- B. Galvanized Surfaces
 - 1. New Galvanized: Solvent clean in accordance with SSPC-SP 1.
 - 2. Galvanized with Slight Coating Deterioration or with Little or No Rusting: Water blast between 2000 to 3000 psi, to remove loose coating from surfaces with less than 20% coating deterioration and no blistering, peeling, or cracking. Use inhibitor as recommended by the coating manufacturer to prevent rusting.
 - 3. Galvanized with Severe Deteriorated Coating or Severe Rusting: Spot abrasive blast rusted areas (SSPC SP6) and abrasive blast (SSPC SP7) remaining areas to remove existing coating. The depth shall be no greater than 1.5 mils.

3.4 PREPARATION OF CONCRETE AND CEMENTITIOUS SURFACE

- A. Concrete and Masonry
 - 1. Surface Cleaning: Remove the following deleterious substances:
 - a. Dirt, Chalking, Grease, and Oil: Wash new and existing uncoated surfaces with a solution composed of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, and 3 quarts of warm water. Then rinse thoroughly with fresh water. Wash existing coated surfaces with a suitable detergent and rinse thoroughly. For large areas, water blasting may be used.
 - b. Fungus and Mold: Wash new, existing coated, and existing uncoated surfaces with a solution composed of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, 1 quart 5% sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water.
 - c. Glaze and Loose Particles: Remove by wire brushing.
 - d. Efflorescence: Remove by scraping or wire brushing followed by washing with a 5-10% by weight aqueous solution of hydrochloric (muriatic) acid. Do not allow acid to remain on the surface for more than five minutes before rinsing with fresh water. Do not acid clean more than 4 SF of surface, per workman, at one time.
 - 2. Cosmetic Repair of Minor Defects: Repair or fill mortar joints and minor defects, including but not limited to spalls, in accordance with manufacturer's recommendations and prior to coating application.

3.5 PREPARATION OF WOOD AND PLYWOOD SURFACE

A. Plywood and Wood Surfaces:

1. Surface Cleaning: Surfaces shall be free from dust and other deleterious substances prior to receiving paint or other finish. Do not use water to clean uncoated wood. Scrape to remove loose coatings. Lightly sand to roughen the entire area of previously enamel-coated wood surfaces.
2. Removal of Fungus and Mold: Wash existing coated surfaces with a solution composed of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, 1 quart 5% sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water.
3. Cosmetic Repair of Minor Defects (Knots and Resinous Wood and Fire, Smoke, Water, and Color Marker Stained Existing Coated Surface): Prior to application of paint, treat with an application of commercially available knot sealer.
4. Cosmetic Repair of Minor Defects (Open Joints and Other Openings): Fill with whiting putty, FS TT-P-00791. Sand smooth after putty has dried.
5. Prime Coat for New Exterior Surfaces: Prime coat wood doors, windows, frames, and trim before wood becomes dirty, warped, or weathered.
6. Cracks and Nailheads: Set and putty stop nailheads and putty cracks after the prime coat has dried.

3.6 APPLICATION

A. General

1. Prime or seal wood required to be job-painted immediately upon delivery to job. Prime the edges, ends, faces, undersides, and backsides of such wood.
2. When natural finish is required, use Spar varnish for backpriming. Backprime paneling on interior partitions, only where masonry, plaster, or other wet wall construction occurs on backside. When stains are specified, stains shall be applied as recommended by manufacturer to obtain a uniform stain color. Stain shall be used in color and amounts to produce the desired finish to match the Architect's approved sample or as approved by the Architect.
3. During the application of paint and other special coatings provide any additional portable air supply and exhaust systems as necessary to provide a minimum of 2 air changes per hour for the spaces in which The painting or special coatings are being applied. The exhausted air shall be expelled directly to the exterior, without any blending with any other interior air or contaminating any outside air supply to the spaces or other parts of the building. The 2 air changes per hour will be continuous (24 hours per day) from the start of the paint and special coating application until 24 hours after the painting and special coating application is complete. If odors are still detectable from the painting and special coating application 24 hours after the painting and special coating application, the Installer shall bring in additional portable air supply and exhaust systems and increase the number of air changes for the painted and special coated areas to 4 per hour or greater for as long as any odors from the painting and special coating application are detectable (during this period, no additional work shall be performed in these spaces).
4. Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the substrate and type of material being applied. Tint each coat of paint progressively lighter to enable confirmation of number of coats.
5. Apply additional coats when undercoats or other conditions show through the final coat of paint, until the paint film is of uniform finish, color, sheen, texture, and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
6. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat, only, before final installation of equipment.
7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

8. Paint the back sides of access panels, and removable or hinged covers to match the exposed surfaces.
 9. Finish doors on tops, bottoms and side edges the same as the faces, unless otherwise indicated.
 10. Sand lightly between each succeeding enamel coats, unless otherwise indicated.
 11. Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
 12. All closets and interior of all cabinets including doors, shelves, backs and sides shall be finished the same as adjoining rooms, unless otherwise specified. All other surfaces shall be finished the same as nearest or adjoining surfaces unless otherwise shown.
 13. The insides of all wood drawers, except where inside drawer surfaces are clad with laminate plastic, shall be given one coat of Spar varnish, satin finish.
- B. Scheduled Painting: Apply the first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
- C. Prime Coats
1. Apply a prime coat to material which is required to be painted or finished, and which has not been prime coated by others.
 2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- D. Coating Application: Apply coating materials in accordance with SSPC-PA 1 and the manufacturer's recommendations. SSPC-PA 1 methods are applicable to all substrates, except as modified herein. Thoroughly work coating materials into joints, crevices and open spaces. Touch up damaged coatings before applying subsequent coats. Interior areas shall be broom clean and dust free before and during the application of coating material.
1. Drying Time: Allow time between coats, as recommended by the coating manufacturer, to permit thorough drying. Provide each coat in specified condition to receive the next coat.
 2. Primers and Intermediate Coats: Do not allow primers or intermediate coats to dry more than 30 days, or longer than recommended by the manufacturer, before applying subsequent coats. Follow manufacturer's recommendations for surface preparation if primers or intermediate coats are allowed to dry longer than recommended by manufacturers of subsequent coatings. Each coat shall cover the surface of the preceding coat or surface uniformly and completely, and there shall be a visually perceptible difference in shades of successive coats.
 3. Finished Surfaces: Provide finished surfaces free from runs, drops, ridges, waves, laps, brush marks, and variations in colors.
- E. Equipment: Apply coatings with approved brushes, approved rollers, or approved spray equipment, unless specified otherwise. Spray areas made inaccessible to brushing by items such as ducts and other equipment.
- F. Thinning of Paints: Reduce paints to proper consistency by adding fresh paint, except when thinning is mandatory for the type of paint being used. Obtain written permission from the paint manufacturer to use thinners. The written permission shall include quantities and types of thinners to use.
- G. Coating Systems:
1. Systems by Substrates: Apply coatings that conform to the paint systems specified.
 2. Minimum Wet Film Thickness (MWF): Apply each coat of paints, primers, varnishes, enamels, undercoats, and other coatings at a rate not less than the minimum wet film thicknesses specified, unless noted otherwise.
 3. Minimum Dry Film Thickness (MDF): Paints, primers, varnishes, enamels, undercoats, and other coatings shall be applied in a manner to produce the MDF indicted for each coat individually and the sum of the MDFs for a paint system.

4. Coatings for Surfaces Not Specified Otherwise: Coat surfaces which have not been specified the same as surfaces having similar conditions of exposure.
5. Existing Coated Surfaces To Be Painted: Apply coatings conforming to the specifications for paint systems, except that pretreatments, sealers, fillers, and primers need not be provided on surfaces where existing coating are soundly adhered and in good condition.

3.7 COATING SYSTEMS FOR METAL

- A. Primer: Apply specified ferrous metal primer on the same day that surface is cleaned. If flash rusting occurs, re-clean the surface prior to application of primer.
 1. Inaccessible Surfaces: Prior to erection, use two coats of the specified primer on metal surfaces that will be inaccessible after erection.
 2. Shop-Primed Surfaces: Touch up exposed substrates and damaged coatings to protect from rusting prior to applying field primer.
 3. Surface Previously Coated with Epoxy or Urethane: Apply epoxy-polyamide primer in accordance with manufacturer's recommendations immediately prior to application of epoxy or urethane coatings.
 4. Pipes and Tubing: The semi-transparent film applied to pipes and tubing at the mill is not to be considered a shop coat. Apply specified ferrous metal primer prior to application of subsequent coats.
 5. Exposed Nails, Screws, Fasteners, and Miscellaneous Ferrous Surfaces: On surfaces to be coated with water thinned coatings, spot prime exposed nails and other ferrous metal with latex primer.
- B. Apply coatings in accordance with paint systems specified.

3.8 COATING SYSTEMS FOR CONCRETE AND CEMENTITIOUS SUBSTRATES

- A. Apply coatings in accordance with paint systems specified.

3.9 COATING SYSTEMS FOR WOOD AND PLYWOOD

- A. Apply coatings in accordance with paint systems specified.
- B. Prior to erection, apply two coats of the specified primer to treat and prime wood and plywood surfaces that will be inaccessible after erection.
- C. Wood Floors to Receive Natural Finish: Apply coating with applicators as recommended by the coating manufacturer. Rub with steel wool between intermediate coats as recommended by the coating manufacturer's printed instructions.

3.10 COMPLETED WORK

- A. Match approved samples for color, texture and coverage. Finished work shall be uniform, of approved color, smooth and free from runs, sags, defective brushing and clogging. Make edges of paint adjoining other materials or colors sharp and clean, without overlapping. Remove, refinish or repaint work not in compliance with specified requirements.

3.11 CLEAN-UP AND PROTECTION

- A. Clean-up: During the progress of the work, remove from the site all discarded paint materials, rubbish, cans and rags at the end of each work day. Upon completion of painting work, clean paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- B. Protection
 1. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Architect.
 2. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

3. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION

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**SECTION 099113
EXTERIOR PAINTING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. SSPC-PA 1 - Shop, Field, and Maintenance Coating of Metals; 2024, with Errata (2025).

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
 - 1. Fiber-cement board.
 - 2. Steel and iron.
 - 3. Galvanized metal.
 - 4. Wood.
 - 5. Portland cement plaster (stucco).
 - 6. Gypsum board.
- B. Related Requirements:
 - 1. Section 051200 "Structural Steel Framing" for shop priming of metal substrates.
 - 2. Section 055000 "Metal Fabrications" for shop priming metal fabrications.
 - 3. Section 055116 "Metal Floor Plate Stairs" for shop priming metal floor plate stairs.
 - 4. Section 055119 "Metal Grating Stairs" for shop priming metal grating stairs.
 - 5. Section 055213 "Pipe and Tube Railings" for shop priming pipe and tube railings.
 - 6. Section 099600 "High-Performance Coatings" for tile-like coatings.
 - 7. Section 099300 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on exterior wood substrates.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 2 percent, but not less than 1 gal. of each material and color applied.

1.6 QUALITY ASSURANCE**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Benjamin Moore & Co.
 - 2. Ferrell-Calhoun.
 - 3. PPG Paints.
 - 4. Sherwin-Williams Company (The).
- B. Products: Subject to compliance with requirements, provide one of the products listed in the Exterior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Colors: As selected by Architect from manufacturer's full range .

2.3 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
 - 1. Owner may engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 - 2. Testing agency will perform tests for compliance with product requirements.
 - 3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Fiber-Cement Board: 12 percent.
 - 3. Masonry (Clay and CMUs): 12 percent.
 - 4. Wood: 15 percent.
 - 5. Portland Cement Plaster: 12 percent.
 - 6. Gypsum Board: 12 percent.
- C. Portland Cement Plaster Substrates: Verify that plaster is fully cured.

- D. Exterior Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- E. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer .
- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Wood Substrates:
 - 1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable items same as similar exposed surfaces.
 - 3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
 - 4. Paint entire exposed surface of window frames and sashes.
 - 5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed to view:
 - a. Uninsulated metal piping.
 - b. Pipe hangers and supports.
 - c. Metal conduit.
 - d. Plastic conduit.
 - e. Tanks that do not have factory-applied final finishes.
 - f. .

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Cement Board Substrates:
 - 1. Latex System MPI EXT 3.3J:
 - a. Prime Coat: Latex, exterior, matching topcoat.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, flat (MPI Gloss Level 1) , MPI #10.
- B. CMU Substrates:
 - 1. Latex over Alkali-Resistant Primer System:
 - a. Prime Coat: Primer, alkali resistant, water based.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4).
- C. Steel and Iron Substrates:
 - 1. Water-Based Light Industrial Coating System :
 - a. Prime Coat: Primer, alkyd, anti-corrosive for metal.

- b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
 - c. Topcoat: Light industrial coating, exterior, water based (MPI Gloss Level 3).
 - 2. Alkyd System :
 - a. Intermediate Coat: Exterior, alkyd enamel, matching topcoat.
 - b. Topcoat: Alkyd, exterior, gloss (MPI Gloss Level 6).
- D. Galvanized-Metal Substrates:
 - 1. Water-Based Light Industrial Coating System :
 - a. Prime Coat: Primer, galvanized, water based.
 - b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
 - c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5).
- E. Wood Substrates: Glued-laminated construction.
 - 1. Latex over Alkyd Primer System:
 - a. Prime Coat: Primer, alkyd for exterior wood.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, flat (MPI Gloss Level 1).
- F. Wood Substrates: Exposed framing.
 - 1. Latex over Alkyd Primer System:
 - a. Prime Coat: Primer, alkyd for exterior wood.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4).
- G. Portland Cement Plaster Substrates:
 - 1. Latex System :
 - a. Intermediate Coat: Latex, exterior, matching topcoat.
 - b. Topcoat: Latex, exterior, flat (MPI Gloss Level 1).
 - 2. Water-Based Light Industrial Coating System:
 - a. Prime Coat: Primer, alkali resistant, water based.
 - b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
 - c. Topcoat: Light industrial coating, exterior, water based (MPI Gloss Level 3).
- H. Exterior Gypsum Board Substrates:
 - 1. High-Build Latex System: Dry film thickness of not less than 10 mils.
 - a. Prime Coat: As recommended in writing by topcoat manufacturer.
 - b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
 - c. Topcoat: Latex, exterior, high build.

END OF SECTION

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**SECTION 099123
INTERIOR PAINTING****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. SSPC-PA 1 - Shop, Field, and Maintenance Coating of Metals; 2024, with Errata (2025).
- B. SSPC-SP 11 - Power-Tool Cleaning to Bare Metal; 2020.

1.2 SUMMARY

- A. Section Includes: Surface preparation of interior substrates and application of the following:
 - 1. Primers.
 - 2. Water-based finish coatings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include preparation requirements and application instructions.
 - 2. Indicate VOC content.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match paint products applied and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint Products: 5 percent, but not less than 1 gal. of each material and color applied.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures of less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS**2.1 SOURCE LIMITATIONS**

- A. Obtain each paint product from single source from single manufacturer.

2.2 INTERIOR PAINTS, GENERAL

- A. Interior Paints: Subject to compliance with requirements, available products that may be incorporated into the Work include but are not limited to products listed in product types below and applicable interior painting schedule articles for the paint category indicated.
- B. Material Compatibility:
 - 1. Materials for use within each paint system must be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturer for use in paint system and on substrate indicated.
- C. Colors: As selected by Architect from manufacturer's full range.
 - 1. 30 percent of surface area will be painted with deep tones.

2.3 PRIMERS

- A. Interior Alkyd Primer Sealer: Solvent-based, alkyd-type, primer/sealer for new interior wood, plaster, and porous surfaces.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Behr Paint Company (Behr Process LLC)
 - b. Benjamin Moore & Co.
 - c. PPG Paints; PPG Industries, Inc.
 - d. Sherwin-Williams Company (The)
2. Basis-of-Design Product: Subject to compliance with requirements, provide ???Insert manufacturer's name; product name or designation??? or comparable product by one of the following:
 - a. Behr Paint Company (Behr Process LLC)
 - b. Benjamin Moore & Co.
 - c. PPG Paints; PPG Industries, Inc.
 - d. Sherwin-Williams Company (The)

2.4 WATER-BASED FINISH COATINGS

- A. Interior, Latex, Institutional Low-Odor/VOC Paint: White or colored latex coating with low-odor characteristics and a VOC of less than 10 grams per liter, for use in areas, such as hospitals and other occupied buildings, where the odor and VOC levels of conventional latex products would preclude their use.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Behr Paint Company (Behr Process LLC)
 - b. Benjamin Moore & Co.
 - c. PPG Paints; PPG Industries, Inc.
 - d. Sherwin-Williams Company (The)
 2. Basis-of-Design Product: Subject to compliance with requirements, provide ???Insert manufacturer's name; product name or designation??? or comparable product by one of the following:
 - a. Behr Paint Company (Behr Process LLC)
 - b. Benjamin Moore & Co.
 - c. PPG Paints; PPG Industries, Inc.
 - d. Sherwin-Williams Company (The)
 3. Gloss and Sheen Level: Manufacturer's standard flat & satin.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Concrete: 12 percent.
 2. Cementitious Composition Board: 12 percent.
 3. Masonry (Clay and CMU): 12 percent.
 4. Wood: 15 percent.
 5. Gypsum Board: 12 percent. Verify that finishing compound is dry and sanded smooth.
 6. Plaster: 12 percent. Verify that plaster is fully cured.
- C. Verify suitability of substrates, including surface conditions and compatibility, with finishes and primers. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.

- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove loose rust, loose mill scale, loose shop primer, and other loose foreign matter. Clean using methods recommended in writing by paint manufacturer but not less than the following:
 - 1. SSPC-SP 11.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.3 APPLICATION OF INTERIOR PAINT PRODUCTS

- A. Apply paints in accordance with manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Paint entire exposed surface of window frames and sashes.
 - 5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 6. Primers specified in the applicable interior painting schedule articles may be omitted on items that are factory primed or factory finished if compatible with intermediate and topcoat coatings and acceptable to intermediate and topcoat paint manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire-Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed to view in equipment rooms:
 - a. Equipment, including panelboards and switch gear.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Tanks that do not have factory-applied final finishes.
 - h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - i. ???Insert mechanical items to be painted???

2. Paint the following work where exposed to view in occupied spaces:
 - a. Equipment, including panelboards.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - h. Other items as directed by Architect.
 - i. ???Insert requirements???
3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

- A. Dry-Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry-film thickness.
 1. Touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry-film thickness of applied paint does not comply with paint manufacturer's written recommendations, apply additional coats as needed to provide dry-film thickness that complies with paint manufacturer's written recommendations.
 3. Cost of retesting is Contractor's responsibility.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
 2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
 3. Allow empty paint cans to dry before disposal.
 4. Collect waste paint by type and deliver to recycling or collection facility.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE, GYPSUM-BASED SUBSTRATES

- A. Gypsum Board and Plaster Substrates:
 1. Institutional Low-Odor/VOC Latex System :
 - a. Prime Coat: Interior alkyd primer sealer.
 - b. Intermediate Coat: Matching topcoat.
 - c. Topcoat: Interior, latex, institutional low odor/VOC, for ceilings flat.
 - d. Topcoat: Interior latex paint, institutional low odor/VOC for vertical surfaces: satin

END OF SECTION

DIVISION 10
SPECIALTIES

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**SECTION 101400
– INTERIOR SIGNAGE****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Panel signs.
- B. Related Sections include the following:
 - 1. Division 01 Section "Temporary Facilities and Controls" for temporary Project identification signs and for temporary information and directional signs.
 - 2. Division 22 Section "Identification for Plumbing Piping and Equipment" for labels, tags, and nameplates for plumbing systems and equipment.
 - 3. Division 23 Section "Identification for HVAC Piping and Equipment" for labels, tags, and nameplates for HVAC systems and equipment.
 - 4. Division 26 Sections for electrical service and connections for illuminated signs.
 - 5. Division 26 Section "Identification for Electrical Systems" for labels, tags, and nameplates for electrical equipment.
 - 6. Division 26 Section "Interior Lighting" for illuminated Exit signs.

1.3 DEFINITIONS

- A. ADA-ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines."

1.4 REFERENCE STANDARDS

- A. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings; 2018, with Editorial Revision.
- C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- D. ASTM D4802 - Standard Specification for Poly(Methyl Methacrylate) Acrylic Plastic Sheet; 2016.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for signs.
 - 1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
 - 2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of actual units or sections of units showing the full range of colors available for the following:
 - 1. Aluminum.
 - 2. Acrylic sheet.
 - 3. Die-cut vinyl characters and graphic symbols. Include representative samples of available typestyles and graphic symbols.

- D. Samples for Verification: For each of the following products and for the full range of color, texture, and sign material indicated, of sizes indicated:
 - 1. Plaque Casting: 6 inches square including border.
 - 2. Dimensional Characters: Full-size Samples of each type of dimensional character (letter, number, and graphic element).
 - 3. Aluminum: For each form, finish, and color, on 6-inch- long sections of extrusions and squares of sheet at least 4 by 4 inches.
 - 4. Acrylic Sheet: 8 by 10 inches for each color required.
 - 5. Accessories: Manufacturer's full-size unit.
- E. Sign Schedule: see list at end of this specification.
- F. Qualification Data: For Installer and fabricator.
- G. Maintenance Data: For signs to include in maintenance manuals.
- H. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.
- D. Regulatory Requirements: Comply with applicable provisions in ADA-ABA Accessibility Guidelines.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of signs in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify recess openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION

- A. Coordinate placement of anchorage devices with templates for installing signs.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metal and polymer finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image colors and sign lamination.
 - 2. Warranty Period: Five years from date of Final Completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Aluminum Castings: ASTM B26/B26M, of alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated.
- B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.

- C. Aluminum Extrusions: ASTM B221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5.
- D. Acrylic Sheet: ASTM D4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).
- E. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

2.2 PANEL SIGNS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. ACE Sign Systems, Inc.
 - 2. Advance Corporation; Braille-Tac Division.
 - 3. Allen Industries Architectural Signage
 - 4. Allenite Signs; Allen Marking Products, Inc.
 - 5. APCO Graphics, Inc.
 - 6. ASI-Modulex, Inc.
 - 7. Best Sign Systems Inc.
 - 8. Bunting Graphics, Inc.
 - 9. Fossil Industries, Inc.
 - 10. Gemini Incorporated.
 - 11. Grimco, Inc.
 - 12. Innerface Sign Systems, Inc.
 - 13. InPro Corporation
 - 14. Matthews International Corporation; Bronze Division.
 - 15. Mills Manufacturing Company.
 - 16. Mohawk Sign Systems.
 - 17. Nelson-Harkins Industries.
 - 18. Seton Identification Products.
 - 19. Signature Signs, Incorporated.
 - 20. Supersine Company (The)
- B. Interior Panel Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner, complying with the following requirements:
 - 1. Acrylic Sheet: 0.060 inch thick.
 - 2. Laminated Sheet: High-pressure engraved stock with contrasting color face laminated to acrylic core as selected by Architect from manufacturer's full range.
 - 3. Laminated, Sandblasted Polymer: Raised graphics with Braille 1/32 inch above surface with contrasting colors as selected by Architect from manufacturer's full range and laminated to acrylic back.
 - 4. Edge Condition: Square cut.
 - 5. Corner Condition: Square.
 - 6. Mounting: Unframed.
 - a. Wall mounted with two-face tape.
 - b. Manufacturer's standard anchors for substrates encountered.
 - 7. Color: As selected by Architect from manufacturer's full range.
 - 8. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors.
- C. Exterior Panel Sign: 6mm aluminum composite material on a thermoplastic core prefinished exposed face, fabricated to shape and thickness noted on exterior sign details.
- D. Changeable Message Inserts: Fabricate signs to allow insertion of changeable messages in the form of transparent covers with paper inserts printed by Owner.

1. Furnish insert material and software for creating text and symbols for PC-Windows computers for Owner production of paper inserts.
2. Furnish insert material cut-to-size for changeable message insert.
- E. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
 1. Panel Material: Clear acrylic sheet with opaque color coating, subsurface applied.
 2. Raised-Copy Thickness: Not less than 1/32 inch.
- F. Engraved Copy: Machine engrave letters, numbers, symbols, and other graphic devices into panel sign on face indicated to produce precisely formed copy, incised to uniform depth.
 1. Engraved Plastic Laminate: Engrave through exposed face ply of plastic-laminate sheet to expose contrasting core ply.
 2. Engraved Metal: Fill engraved copy with enamel.
 3. Engraved Opaque Acrylic Sheet: Fill engraved copy with enamel.
 4. Face-Engraved Clear Acrylic Sheet: Fill engraved copy with enamel. Apply opaque background color coating to back face of acrylic sheet.
- G. Colored Coatings for Acrylic Sheet: For copy and background and frame colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and are UV and water resistant for five years for application intended.
 1. Color: As selected by Architect from manufacturer's full range.

2.3 ACCESSORIES

- A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.4 FABRICATION

- A. General: Provide manufacturer's standard signs of configurations indicated.
 1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
 2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
 3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
 4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

2.5 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ALUMINUM FINISHES

- A. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.
 - 1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

2.7 ACRYLIC SHEET FINISHES

- A. Colored Coatings for Acrylic Sheet: For copy and background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and that are UV and water resistant for five years for application intended.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that items, including anchor inserts, are sized and located to accommodate signs.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.
 - 1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches of sign without encountering protruding objects or standing within swing of door.
- B. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.
 - 1. Two-Face Tape: Mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.
 - 2. Shim Plate Mounting: Provide 1/8-inch-thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach panel signs to plate using method specified above.
 - 3. Mechanical Fasteners: Use nonremovable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer.
- C. Dimensional Characters: Mount characters using standard fastening methods to comply with manufacturer's written instructions for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
 - 1. Flush Mounting: Mount characters with backs in contact with wall surface.
 - 2. Projected Mounting: Mount characters at projection distance from wall surface indicated.
- D. Cast-Metal Plaques: Mount plaques using standard fastening methods to comply with manufacturer's written instructions for type of wall surface indicated.
 - 1. Concealed Mounting: Mount plaques by inserting threaded studs into tapped lugs on back of plaque. Set in predrilled holes filled with quick-setting cement.
 - 2. Face Mounting: Mount plaques using exposed fasteners with rosettes attached through face of plaque into wall surface.

3.3 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

3.4 SCHEDULE

- A. See Drawing A-621a for layout, style and quantity.

END OF SECTION

**SECTION 101419
DIMENSIONAL LETTER SIGNAGE****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Dimensional characters.
 - a. Cutout dimensional characters.
 - b. Fabricated channel dimensional characters.
 - c. Illuminated, fabricated channel dimensional characters.

1.2 DEFINITIONS

- A. Illuminated: Illuminated by lighting source integrally constructed as part of the sign unit.

1.3 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 COORDINATION

- A. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

PART 2 PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. Use concealed fasteners and anchors unless indicated to be exposed.
 - 2. Sign Mounting Fasteners:
 - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
 - b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
 - c. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, installed in predrilled holes.
- B. Adhesive: As recommended by sign manufacturer.

2.3 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
 2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
 3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
 4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
 5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
 6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
 7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.
- B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.
1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color unless otherwise indicated.

2.4 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.
- D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Verify that electrical service is correctly sized and located to accommodate signs.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.

- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

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**SECTION 102600
WALL AND DOOR PROTECTION****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2024.
- B. ASTM D6098 - Standard Classification System and Basis for Specification for Extruded and Compression Molded Shapes Made from Polycarbonate (PC); 2016.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2025.
- D. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- E. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

- A. Section Includes:
 - 1. Corner guards.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, impact strength, dimensions of individual components and profiles, and finishes.
 - 2. Include fire ratings of units recessed in fire-rated walls and listings for door-protection items attached to fire-rated doors.
- B. Samples for Initial Selection: For each type of impact-resistant wall-protection unit indicated, in each color and texture specified.
 - 1. Include Samples of accent strips and accessories to verify color selection.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of wall and door protection product to include in maintenance manuals.
 - 1. Include recommended methods and frequency of maintenance for maintaining best condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to finishes and performance.

1.7 QUALITY ASSURANCE**1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Store wall and door protection in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
 - 1. Maintain room temperature within storage area at not less than 70 deg F during the period plastic materials are stored.
 - 2. Keep plastic materials out of direct sunlight.
 - 3. Store plastic wall- and door-protection components for a minimum of 72 hours, or until plastic material attains a minimum room temperature of 70 deg F.
 - a. Store corner-guard covers in a vertical position.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of wall- and door-protection units that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including detachment of components from each other or from the substrates, delamination, and permanent deformation beyond normal use.
 - b. Deterioration of metals, metal finishes, plastics, and other materials beyond normal use.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 MANUFACTURERS**

- A. Source Limitations: Obtain wall- and door-protection products from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Surface Burning Characteristics: Comply with ASTM E84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 450 or less.
- B. Regulatory Requirements: Comply with applicable provisions in ICC A117.1 .

2.3 CORNER GUARDS

- A. Surface-Mounted, Transparent-Plastic Corner Guards : Fabricated as one piece from clear polycarbonate plastic sheet; with formed edges; fabricated with 90- or 135-degree turn to match wall condition.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Babcock-Davis.
 - b. Construction Specialties, Inc.
 - c. inpro Corporation.
 - d. JL Industries; Activar Construction Products Group, Inc.
 - 2. Wing Size: Nominal 3/4 by 3/4 inch .
 - 3. Thickness: Minimum 0.050 inch .
 - 4. Mounting: Countersunk screws through factory-drilled mounting holes .
- B. Surface-Mounted, Metal Corner Guards : Fabricated as one piece from formed or extruded metal with formed edges; with 90- or 135-degree turn to match wall condition.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Floor Products Company, Inc.
 - b. Babcock-Davis.
 - c. Balco; a CSW Industrials Company.
 - d. Construction Specialties, Inc.
 - e. inpro Corporation.
 - f. Tepromark Architectural Products, LLC.
 - 2. Material: Stainless-steel sheet, Type 304 .
 - a. Thickness: Minimum 0.0625 inch .
 - b. Finish: Directional satin, No. 4 .
 - 3. Wing Size: Nominal 2-1/2 by 2-1/2 inches .
 - 4. Corner Radius: 1/8 inch .
 - 5. Mounting: Adhesive.

2.4 MATERIALS

- A. Plastic Materials: Chemical- and stain-resistant, high-impact-resistant plastic with integral color throughout; extruded and sheet material as required, thickness as indicated.

- B. Polycarbonate Plastic Sheet: ASTM D6098, S-PC01, Class 1 or Class 2, abrasion resistant; with a minimum impact-resistance rating of 15 feet-lbf/in. of notch when tested according to ASTM D256, Test Method A.
- C. Solid Wood: Clear hardwood lumber of species indicated, free of appearance defects, and selected for compatible grain and color.
- D. Fasteners: Aluminum, nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security-type fasteners where exposed to view.
- E. Adhesive: As recommended by protection product manufacturer.

2.5 FABRICATION

- A. Fabricate wall and door protection according to requirements indicated for design, performance, dimensions, and member sizes, including thicknesses of components.
- B. Curved Panels: Preform curved semirigid, abuse-resistant sheet wall covering in factory for radius and sheet thickness as follows:
 - 1. Sheet Thickness of 0.040 Inch: 24-inch radius.
- C. Factory Assembly: Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
- D. Quality: Fabricate components with uniformly tight seams and joints and with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.
- E. Wood Handrails: Miter corners and ends of wood handrails for returns.

2.6 FINISHES

- A. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and wall areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine walls to which wall and door protection will be attached for blocking, grounds, and other solid backing that have been installed in the locations required for secure attachment of support fasteners.
 - 1. For wall and door protection attached with adhesive, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Complete finishing operations, including painting, before installing wall and door protection.
- B. Before installation, clean substrate to remove dust, debris, and loose particles.

3.3 INSTALLATION

- A. Installation Quality: Install wall and door protection according to manufacturer's written instructions, level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
- B. Mounting Heights: Install wall and door protection in locations and at mounting heights indicated on Drawings.

- C. Accessories: Provide splices, mounting hardware, anchors, trim, joint moldings, and other accessories required for a complete installation.
 - 1. Provide anchoring devices and suitable locations to withstand imposed loads.
 - 2. Where splices occur in horizontal runs of more than 20 feet, splice aluminum retainers and plastic covers at different locations along the run, but no closer than 12 inches apart.
- D. Abuse-Resistant Wall Covering: Install top and edge moldings, corners, and divider bars as required for a complete installation.
- E. Door-Frame Protectors: Install on both door jams.
- F. Fire Doors: Install protection according to the listing of each item.

3.4 CLEANING

- A. Immediately after completion of installation, clean plastic covers and accessories using a standard ammonia-based household cleaning agent.
- B. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION

**SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES****PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.
- C. 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; 2025.
- D. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017 (Reapproved 2022).
- E. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.
- F. ASTM F446 - Standard Consumer Safety Specification for Grab Bars and Accessories Installed in the Bathing Area; 2019.
- G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

- A. Section Includes:
 - 1. Public-use washroom accessories.
 - 2. Private-use bathroom accessories.
 - 3. Warm-air dryers.
 - 4. Childcare accessories.
 - 5. Underlavatory guards.
 - 6. Custodial accessories.
- B. Related Sections:
 - 1. Section 088300 "Mirrors" for frameless mirrors.
 - 2. Section 093013 "Ceramic Tiling" for ceramic toilet and bath accessories.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include the following:
 - 1. Construction details and dimensions.
 - 2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
 - 3. Material and finish descriptions.
 - 4. Features that will be included for Project.
 - 5. Manufacturer's warranty.
- B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated.
 - 2. Identify products using designations indicated.

1.5 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Source Limitations: For products listed together in the same Part 2 articles, obtain products from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.8 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.9 WARRANTY

- A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 PRODUCTS**2.1 MATERIALS**

- A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.
- B. Brass: ASTM B 19, flat products; ASTM B 16/B 16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.
- C. Steel Sheet: ASTM A1008/A1008M, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.
- D. Galvanized-Steel Sheet: ASTM A653/A653M, with G60 hot-dip zinc coating.
- E. Galvanized-Steel Mounting Devices: ASTM A153/A153M, hot-dip galvanized after fabrication.
- F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- G. Chrome Plating: ASTM B456, Service Condition Number SC 2 (moderate service).
- H. Mirrors: ASTM C1503, Mirror Glazing Quality, clear-glass mirrors, nominal 0.24 inch thick.
- I. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. American Specialties, Inc.
 - 2. Bobrick Washroom Equipment, Inc.
 - 3. Bradley Corporation.
- B. Toilet Tissue (Roll) Dispenser ???Insert drawing designation???:
 - 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 - 2. Description: Roll-in-reserve dispenser with hinged front secured with tumbler lockset ???Insert description???
 - 3. Mounting: Recessed.
 - 4. Operation: Noncontrol delivery with standard spindle ???Insert description???
 - 5. Capacity: Designed for 4-1/2- or 5-inch- ???Insert dimension??? diameter tissue rolls.
 - 6. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???

- C. Combination Toilet Tissue Dispenser ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Description: Combination unit with double-roll toilet tissue dispenser and the following:
 - a. Removable sanitary-napkin waste receptacle with self-closing, disposal-opening cover.
 - b. Seat-cover dispenser with minimum capacity of 500 ???Insert number??? single or half-fold seat covers.
 3. Mounting: Recessed.
 4. Toilet Tissue Dispenser Capacity: 4-1/2- or 5-inch-diameter tissue rolls.
 5. Toilet Tissue Dispenser Operation: Noncontrol delivery with theft-resistant spindles ???Insert description???.
 6. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???.
 7. Lockset: Tumbler type.
- D. Paper Towel (Folded) Dispenser ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Mounting: Recessed.
 3. Minimum Capacity: 400 C-fold or 525 multifold towels ???Insert capacity???.
 4. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???.
 5. Lockset: Tumbler type.
 6. Refill Indicators: Pierced slots at sides or front.
- E. Paper Towel (Roll) Dispenser ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Description: Lever-actuated mechanism permits controlled delivery of paper rolls in preset lengths per stroke.
 3. Mounting: Recessed.
 4. Minimum Capacity: 8-inch- wide, ???Insert capacity???.
 5. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???.
 6. Lockset: Tumbler type.
- F. Waste Receptacle ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Mounting: Open top, recessed ???Insert description???.
 3. Minimum Capacity: ???Insert ???gal. .
 4. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???.
 5. Liner: Reusable vinyl liner ???Insert liner description???.
 6. Lockset: Tumbler type for waste-receptacle.
- G. Combination Towel (Folded) Dispenser/Waste Receptacle ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Description: Combination unit for dispensing C-fold or multifold towels, with removable waste receptacle.
 3. Mounting: Surface mounted.
 - a. Designed for nominal 4-inch wall depth.
 4. Minimum Towel-Dispenser Capacity: 600 C-fold or 800 multifold paper towels ???Insert capacity???.
 5. Minimum Waste-Receptacle Capacity: 4 gal. ???Insert value???.
 6. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???.
 7. Liner: Reusable, vinyl waste-receptacle liner ???Insert liner description???.
 8. Lockset: Tumbler type for towel-dispenser compartment and waste receptacle.
- H. Liquid-Soap Dispenser ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???.
 2. Description: Designed for dispensing soap in liquid or lotion form.
 3. Mounting: Deck mounted on vanity.
 4. Capacity: ???Insert ???oz. .

5. Materials: ???Insert requirements for valve and reservoir materials and finishes???
6. Lockset: Tumbler type.
7. Refill Indicator: Window type.
- I. Grab Bar ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Mounting: Flanges with concealed fasteners.
 3. Material: Stainless steel, 0.05 inchthick.
 - a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
 4. Outside Diameter: 1-1/4 inches.
 5. Configuration and Length: As indicated on Drawings ???Insert configuration and length???
- J. Sanitary-Napkin Disposal Unit ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Mounting: Recessed.
 3. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
 4. Receptacle: Removable.
 5. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???
- K. Seat-Cover Dispenser ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Mounting: Surface mounted.
 3. Minimum Capacity: 250 ???Insert number??? seat covers.
 4. Exposed Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???
 5. Lockset: Tumbler type.
- L. Fold-Down Purse Shelf ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Hinged unit with spring-loaded shelf that automatically returns to vertical position.
 3. Nominal Size: 15 inches long by ???Insert dimensions???
 4. Material and Finish: Chrome-plated, cast-zinc alloy (zamac) with stippled finish on tray or stainless steel, No. 4 finish (satin).

2.3 PRIVATE-USE BATHROOM ACCESSORIES

- A. Toilet Tissue Dispenser ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Single-roll dispenser ???Insert description???
 3. Mounting: Recessed.
 4. Capacity: Designed for 4-1/2- or 5-inch-diameter tissue rolls.
 5. Material and Finish: Solid brass, polished ???Insert material and finish???
- B. Soap Dish ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: ???Insert description???
 3. Mounting: Recessed.
 4. Material and Finish: Solid brass, polished ???Insert material and finish???
- C. Robe Hook ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Double-prong unit.
 3. Material and Finish: Solid brass, polished ???Insert material and finish???
- D. Towel Bar ???Insert drawing designation???:
 1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: 3/4-inch- square tube with rectangular end brackets ???Insert description???

3. Mounting: Flanges with concealed fasteners.
 4. Length: 18 inches ???Insert dimension???
 5. Material and Finish: Stainless steel, No. 4 finish (satin) ???Insert material and finish???
- E. Towel Pin ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Projecting minimum of 3 inches from wall surface.
 3. Material and Finish: Polished brass-plated zinc alloy (zamac) ???Insert material and finish???

2.4 WARM-AIR DRYERS

- A. Warm-Air Dryer ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Mounting: Recessed.
 3. Operation: Touch-button activated with timed power cut-off switch.
 - a. Operation Time: 30 to 40 ???Insert number(s)??? seconds.
 4. Cover Material and Finish: Steel, with white enamel finish ???Insert material and finish???
 5. Electrical Requirements: 115 V, 13 A, 1500 W ???Insert electrical requirements???

2.5 CHILDCARE ACCESSORIES

- A. Diaper-Changing Station ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Horizontal unit that opens by folding down from stored position and with child-protection strap.
 - a. Engineered to support a minimum of 250-lb ???Insert value??? static load when opened.
 3. Mounting: Surface mounted, with unit projecting not more than 4 inches from wall when closed.
 4. Operation: By pneumatic shock-absorbing mechanism.
 5. Material and Finish: HDPE in manufacturer's standard color ???Insert requirements???
 6. Liner Dispenser: Built in.

2.6 UNDERLAVATORY GUARDS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
- B. Underlavatory Guard ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Insulating pipe covering for supply and drain piping assemblies that prevent direct contact with and burns from piping; allow service access without removing coverings.
 3. Material and Finish: Antimicrobial, molded plastic, white.

2.7 CUSTODIAL ACCESSORIES

- A. Utility Shelf ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: With exposed edges turned down not less than 1/2 inch and supported by two triangular brackets welded to shelf underside.
 3. Size: 16 inches long by ???Insert dimensions???
 4. Material and Finish: Not less than nominal 0.05-inch-thick stainless steel, No.4 finish (satin).
- B. Mop and Broom Holder ???Insert drawing designation???:
1. Basis-of-Design Product: ???Insert manufacturer's name; product name or designation???
 2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf ???Insert description???
 3. Length: 36 inches ???Insert dimension???
 4. Hooks: Three ???Insert number???
 5. Mop/Broom Holders: Four ???Insert number???, spring-loaded, rubber hat, cam type.

6. Material and Finish: Stainless steel, No.4 finish (satin).
 - a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.
 - b. Rod: Approximately 1/4-inch-diameter stainless steel.

2.8 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six ???Insert number??? keys to Owner's representative.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION

DIVISION 11
(Not Used)

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DIVISION 12
FURNISHINGS

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**SECTION 122113
HORIZONTAL LOUVER BLINDS****PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Horizontal louver blinds with aluminum slats.
- B. Related Sections include the following:
 - 1. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking and grounds for mounting horizontal louver blinds and accessories.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type and color of horizontal louver blind indicated.
 - 1. Include similar Samples of accessories involving color selection.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Where horizontal louver blinds are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Allow clearances for operable glazed units' operation hardware throughout the entire operating range. Notify Architect of discrepancies. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 PRODUCTS**2.1 HORIZONTAL LOUVER BLINDS, ALUMINUM SLATS**

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Hunter Douglas.
 - 2. Levolor, a Newell Rubbermaid Company.
- B. Slats: Faux Wood; PVC, vinyl or composite materials designed to mimic wood.
 - 1. Width: 2 inch
 - 2. Thickness: Manufacturer's standard
 - 3. Finish: One color
- C. Headrail: Formed steel or extruded aluminum; long edges returned or rolled; fully enclosing operating mechanisms on three sides and end plugs and the following:
 - 1. Capacity: One blind per headrail
- D. Bottom Rail: Formed-steel or extruded-aluminum tube, with plastic or metal capped ends with enclosed ladders and tapes to prevent contact with sill.
- E. Ladders: Evenly spaced to prevent long-term slat sag.
 - 1. For Blinds with Nominal Slat Width 1 Inch or Less: Braided string.
- F. Lift Cords: Manufacturer's standard.
- G. Tilt Control: Enclosed worm-gear mechanism and linkage rod, and the following:
 - 1. Tilt Operation: Manual with clear plastic wand.
- H. Lift Operation: Manual, cord lock; locks pull cord to stop blind at any position in ascending or descending travel.
- I. Mounting: End mounting, permitting easy removal and replacement without damaging blind or adjacent surfaces and finishes; with spacers and shims required for blind placement and alignment indicated.

1. Provide intermediate support brackets if end support spacing exceeds spacing recommended by manufacturer for weight and size of blind.
- J. Hold-Down Brackets and Hooks or Pins: Manufacturer's standard.
- K. Side Channels and Perimeter Light Gap Seals: Manufacturer's standard.
- L. Colors, Textures, Patterns, and Gloss: As selected by Architect from manufacturer's full range

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install horizontal louver blinds level and plumb and aligned with adjacent units according to manufacturer's written instructions, and located so exterior slat edges in any position are not closer than to interior face of glass. Install intermediate support as required to prevent deflection in headrail. Allow clearances between adjacent blinds and for operating glazed opening's operation hardware if any.
- B. Jamb Mounted: Install headrail flush with face of opening jamb and head.

3.3 ADJUSTING

- A. Adjust horizontal louver blinds to operate smoothly, easily, safely, and free of binding or malfunction throughout entire operational range.

3.4 CLEANING AND PROTECTION

- A. Clean horizontal louver blind surfaces after installation, according to manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that horizontal louver blinds are without damage or deterioration at time of Substantial Completion.
- C. Replace damaged horizontal louver blinds that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

END OF SECTION

SECTION 123623.13
PLASTIC-LAMINATE-CLAD COUNTERTOPS**PART 1 GENERAL****1.1 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard; 2022.
- B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- C. ISO 4586-3 - High-Pressure Decorative Laminates (HPL, HPDL) – Sheets Based on Thermosetting Resins (Usually Called Laminates) – Part 3: Classification and Specifications for Laminates Less than 2 mm Thick and Intended for Bonding to Supporting Substrates; 2018.
- D. PS 1 - Structural Plywood; 2023.

1.2 SUMMARY

- A. Section Includes:
 - 1. Plastic-laminate-clad countertops.

1.3 ACTION SUBMITTALS

- A. Product Data:
 - 1. Plastic-laminate-clad countertops.
 - 2. Fire-retardant-treated materials.
 - 3. Accessories.
- B. Product Data Submittals: For each product.
 - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- C. Shop Drawings: For plastic-laminate-clad countertops.
 - 1. Include plans, sections, details, and attachments to other work. Detail fabrication and installation, including field joints.
 - 2. Show locations and sizes of cutouts and holes for items installed in plastic-laminate-clad countertops.
 - 3. Apply AWI Quality Certification Program label to Shop Drawings.
- D. Samples: Plastic laminates in each type, color, pattern, and surface finish required in manufacturer's standard size.
- E. Samples for Initial Selection: For plastic laminates.
- F. Samples for Verification: As follows:
 - 1. Plastic Laminates: For each type, color, pattern, and surface finish required, 12 by 12 inches in size.
 - 2. Wood-Grain Plastic Laminates: For each type, color, pattern, and surface finish required, 12 by 24 inches in size.
 - 3. Fabrication Sample: For each type and profile of countertop required, provide one sample applied to core material with specified edge material applied to one edge.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For the following:
 - 1. Composite wood products.
 - 2. High-pressure decorative laminate.
 - 3. Chemical-resistant, high-pressure decorative laminate.
 - 4. Adhesives.
- C. Quality Standard Compliance Certificates: AWI Quality Certification Program.
- D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - 1. Shop Certification: AWI's Quality Certification Program accredited participant.
- B. Installer Qualifications: AWI's Quality Certification Program accredited participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver countertops only after casework and supports on which they will be installed have been completed in installation areas.
- B. Store countertops in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.
- C. Keep surfaces of countertops covered with protective covering during handling and installation.

1.7 FIELD CONDITIONS

- A. Environmental Limitations without Humidity Control: Do not deliver or install countertops until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.
- B. Environmental Limitations with Humidity Control: Do not deliver or install countertops until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.
- C. Field Measurements: Where countertops are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Established Dimensions: Where countertops are indicated to fit to other construction, establish dimensions for areas where countertops are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 PRODUCTS**2.1 PLASTIC-LAMINATE-CLAD COUNTERTOPS**

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of plastic-laminate-clad countertops indicated for construction, finishes, installation, and other requirements.
 - 1. Provide inspections of fabrication and installation together with labels and certificates from AWI certification program indicating that countertops comply with requirements of grades specified.
 - 2. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.
- B. Grade: Premium.
- C. Regional Materials: Wood products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.
- D. Regional Materials: Wood products shall be manufactured within 500 miles of Project site.
- E. Regional Materials: Wood products shall be manufactured within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.
- F. Indigenous Materials: Wood products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

miles of Project site. If materials are transported by rail or water, the distance transported by rail or water shall be multiplied by 0.25 to determine the distance to Project site.

- G. Regional Materials: Wood products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. If materials are transported by rail or water, the distance transported by rail or water shall be multiplied by 0.25 to determine the distance to Project site.
- H. High-Pressure Decorative Laminate: ISO 4586-3, Grade HGS.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ABET Inc.
 - b. Formica Corporation
 - c. Laminart LLC
 - d. Nevamar Company, LLC
 - e. Wilsonart LLC
- I. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As indicated by manufacturer's designations.
 - 2. Match Architect's sample.
 - 3. As selected by Architect from manufacturer's full range in the following categories:
 - a. Solid colors, matte finish.
 - b. Solid colors with core same color as surface, matte finish.
 - c. Wood grains, gloss finish with grain running parallel to length of countertop.
 - d. Patterns, gloss finish.
- J. Edge Treatment: 3.0-mm PVC edging.
- K. Core Material: Particleboard made with exterior glue.
- L. Core Material at Sinks: Particleboard made with exterior glue.
- M. Core Thickness: 1-1/8 inch.
 - 1. Build up countertop thickness to 1-1/2 inches at front, back, and ends with additional layers of core material laminated to top.
- N. Backer Sheet: Provide plastic-laminate backer sheet, ISO 4586-3, grade to match exposed surface, on underside of countertop substrate.
- O. Paper Backing: Provide paper backing on underside of countertop substrate.

2.2 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard unless otherwise indicated.
 - 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of countertop and quality grade specified unless otherwise indicated.
 - 1. MDF: Medium-density fiberboard, ANSI A208.2, Grade 130.
 - 2. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 3. Softwood Plywood: DOC PS 1.

2.3 MISCELLANEOUS MATERIALS

- A. Adhesive for Bonding Plastic Laminate: Type I, waterproof type as selected by fabricator to comply with requirements.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.
- B. Installation Adhesive:

2.4 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate countertops to dimensions, profiles, and details indicated. Provide front and end overhang of 1 inch over base cabinets. Ease edges to radius indicated for the following:
 - 1. Solid-Wood (Lumber) Members: 1/16 inch unless otherwise indicated.
- C. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Notify Architect seven days in advance of the dates and times countertop fabrication will be complete.
 - 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended, and check measurements of assemblies against field measurements before disassembling for shipment.
- D. Shop cut openings to maximum extent possible to receive appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately, and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 1. Seal edges of cutouts by saturating with varnish.

PART 3 EXECUTION**3.1 PREPARATION**

- A. Before installation, condition countertops to average prevailing humidity conditions in installation areas.
- B. Before installing countertops, examine shop-fabricated work for completion and complete work as required, including removal of packing.

3.2 INSTALLATION

- A. Grade: Install countertops to comply with same grade as item to be installed.
- B. Assemble countertops and complete fabrication at Project site to the extent that it was not completed in the shop.
 - 1. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately, and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 2. Seal edges of cutouts by saturating with varnish.
- C. Field Jointing: Where possible, make in the same manner as shop jointing, using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.
 - 1. Secure field joints in countertops with concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten in accordance with manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- D. Scribe and cut countertops to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical-treatment manufacturer's written instructions, including those for adhesives used to install woodwork.
- F. Countertop Installation: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.

1. Install countertops level and true in line. Use concealed shims as required to maintain not more than a 1/8-inch-in-96-inches variation from a straight, level plane.
2. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c., and, to walls with adhesive.
3. Seal joints between countertop and backsplash, if any, and joints where countertop and backsplash abut walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective countertops, where possible, to eliminate functional and visual defects. Where not possible to repair, replace countertops. Adjust joinery for uniform appearance.
- B. Clean countertops on exposed and semiexposed surfaces.
- C. Protection: Provide Kraft paper or other suitable covering over countertop surfaces, taped to underside of countertop at a minimum of 48 inches o.c. Remove protection at Substantial Completion.

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DIVISION 13 - 19
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SEE MECHANICAL SPECIFICATIONS ON DRAWINGS

DIVISION 20
FIRE PROTECTION, PLUMBING AND HVAC GENERAL
PROVISIONS

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DIVISION 26
ELECTRICAL

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281301 – Access Control System Conduits

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SECTION 260511 - ELECTRICAL GENERAL**PART 1 – GENERAL****1.1 GENERAL**

- A. All work shall conform to the latest editions of the National Electrical Code (NEC) [National Fire Protection Association (NFPA) 70], the Standard for Electrical Safety in the Workplace (NFPA 70E), the Life-Safety Code (NFPA 101), the International Building Code, the Americans with Disabilities Act, and all other applicable federal, state, and local codes and regulations.
- B. All work shall be performed in strict compliance with NFPA 70E. Submission of bid shall stand as an agreement by the Contractor to indemnify and hold harmless the Engineer and Owner from all liability related to damage and/or injury to personnel and equipment during the installation of the project.
- C. The contract documents are schematic in nature and are intended to convey the intent of the electrical work to be performed on this project. Provide all material, labor, equipment, etc., necessary to provide complete and operable electrical systems.
- D. The General Conditions, Supplementary Conditions, General Requirements, Information to Bidders, and all other parts of this set of Contract Documents are hereby adopted and are applicable to the Electrical Contractor.
- E. If we are required to make additional site visits due to the Contractor not meeting the project schedule, additional engineering fees will be invoiced to the Owner (via the Architect if applicable) at our standard hourly rates, along with expenses. The Owner will reduce his payments to the Contractor accordingly.

1.2 SCOPE OF WORK

- A. Visit site prior to bid. Devise a plan for installation of complete and operable electrical systems meeting the requirements and intent of the Contract Documents. Submission of Bid stands as evidence that the Contractor accepts the Contract Documents as sufficient and complete for the work to be performed. Notify the engineer at least two weeks prior to bid of any discrepancies between the Contract Documents and actual field conditions. No change orders will be granted due to existing conditions that could have been observed during a site visit.
- B. Provide temporary power and lighting during construction. Coordinate with the General Contractor for the exact requirements.
- C. Electrical switchgear and panelboard layouts are based on sizes of Square D equipment. Equipment manufactured by General Electric, Siemens, and Cutler Hammer are equally acceptable. However, the Electrical Contractor is responsible for selecting and furnishing gear that will fit in the spaces provided and shall be responsible for arranging the gear to meet the required code clearances. Regardless of the manufacturer, the Electrical Contractor shall provide a drawn-to-scale electrical layout with the equipment brochures for all rooms in which panelboards, motor control centers, switchboards, or switchgear are placed. The drawings shall include the work of all other trades including mechanical system piping, ductwork, sprinkler piping, etc. No conduits shall be installed until layouts have been approved.
- D. Locate junction boxes, pull boxes, disconnects, and other equipment requiring access in such a manner that they are accessible at the end of construction. Notify the Architect where it is

impossible to plan conduit routing or equipment placement in such a manner, and provide the necessary access panels in the ceiling or wall as required. The access panel type and style shall be subject to the Architect's approval. Employ a painter to provide the appropriate coatings as directed by the Architect.

- E. Relocate, or recircuit, all electrical equipment, conduit, and circuitry conflicting with or obstructing work on this project. Where the electrical systems are owned by other entities, pay them to relocate, or recircuit, their facilities.
- F. Arrange for connection of service to all electrical systems by the appropriate utility company. Coordinate completely with all utility company requirements even if they are different than the contract documents. If utility company requirements are different from the contract documents, notify the engineer at least ten days prior to bid. Pay all utility company charges necessary for installation and connection of service. If the cost of the service is unavailable at the time of bid, submit a letter to the General Contractor, signed by the appropriate utility company official, stating that the cost has not been determined. The General Contractor shall submit this letter with his bid. The cost will then become the Owner's responsibility.
- G. Provide all necessary equipment, raceway, circuitry, fittings, lugs, terminations, labor, etc. and connect to all equipment and appliances requiring electrical connections furnished herein, by the Owner, or by other Contractors. Prior to ordering electrical equipment and roughing in for equipment furnished herein, by the Owner, or by other Contractors, verify all connection types, connection locations, connection heights, voltages, number of phases, conductor sizes, disconnecting means, breaker sizes, etc. Furnish the proper electrical equipment for the equipment actually being supplied.

1.2 SCHEDULING OUTAGES

The Contractor is responsible for scheduling any required power, communications, fire alarm system, etc., outages to existing facilities with the Owner and/or other affected parties. The Contractor shall take steps as necessary to minimize the period of these outages including, but not limited to the following:

- Working multiple shifts as required;
- Increasing manpower as required;
- Providing temporary power and/or connections as required.

The cost of all such work, including premium work hours such as weekends and holidays, shall be included in the Contractor's bid price.

1.4 SUBMITTALS AND SHOP DRAWINGS

- A. Within 30 days after award of Contract and prior to beginning work, provide six bound copies of manufacturers' cut sheets containing information concerning each article of electrical equipment to be furnished on this project. These cut sheets shall contain sufficient information to prove compliance with the contract documents. Information addressing the requirements of the contract documents shall be highlighted. Each bound set shall bear the stamp of the Electrical Contractor as well as the General Contractor.
- B. Within 30 days after award of Contract and prior to beginning work, provide six sets of full-size shop drawings showing exact equipment locations with all equipment drawn to scale. Show all raceways with their junction boxes and pull boxes. Show all connection types, locations, and heights to equipment. Provide mounting and support details for all raceways and equipment. Coordinate with all other trades to ensure that there are no conflicts between systems. Each set of shop drawings shall bear the stamp of the Electrical Contractor, the General Contractor, and all Project Sub-Contractors. Failure to submit these Shop Drawings will render the Electrical Contractor responsible for resolving all conflicts between trades at his own expense.

- C. Submittals and Shop Drawings are reviewed to determine quality of materials. Approval of submittals and shop drawings does not relieve the Contractor of meeting the requirements and intent of the Contract Documents.
- D. Outlet, light fixture, and device locations are shown in their approximate locations on the drawings. Coordinate with Architectural drawings to get final locations. Mount all electrical outlets shown at counters such that the bottom of the box is two inches above the backsplash or six inches above a counter with no backsplash. The Owner reserves the right to relocate outlets, light fixtures, and devices a distance not to exceed twenty feet prior to the installation of outlet boxes.
- E. If we are required to reject submittals twice, our additional reviews will be invoiced to the Owner (via the Architect if applicable) at our standard hourly rates. The Owner will reduce his payments to the Contractor accordingly.

PART 2 - PRODUCTS

- 2.1 All electrical equipment and materials shall be new. All equipment and materials shall be stored on the job site in weatherproof enclosures. Electronic equipment shall be stored in facilities where the temperature and humidity are controlled. In addition, comply completely with all manufacturers' requirements for storage and handling.
- 2.2 All equipment shall be UL listed for the application in which it is used and shall be labeled as evidence of its UL listing.
- 2.3 All products of similar type shall be of the same manufacturer.
- 2.4 Each branch circuit and multiwire branch circuit shall be run with its own neutral conductor complying with NEC article 200.4.

PART 3 – EXECUTION

3.1 WORKMANSHIP

All work shall be performed with an emphasis on neatness. The Engineer, Architect, and Owner retain the right to reject work that is, in their judgment, unsatisfactory.

3.2 EXPERIENCE

The Contractor shall have completed at least two jobs of similar size and scope within the past five years. The Engineer reserves the right to reject Contractors based on their inability to submit evidence of their experience, or based on experience with the Contractor on previous projects.

3.3 PERMITS

Obtain and pay for all permits required for work.

3.4 FIREPROOFING

- A. Fireproof all penetrations through firewalls with a fireproofing compound listed to maintain the rating of the wall through which the raceway passes.

- B. The firestopping caulk shall be a one-part, intumescent, latex elastomer. The caulk shall be capable of expanding a minimum of 3 times at 1000°F. The material shall be thixotropic and be applicable to overhead, vertical and horizontal firestops. The caulk shall be listed by independent test agencies such as UL or FM and be tested to, and pass the criteria of, ASTM E 814 Fire Test, tested under positive pressure. It shall comply with the requirements of the NEC (NFPA-70), BOCA, ICBO, SBCCI and NFPA Code 101. Firestopping caulk shall be paintable, but shall be non-hardening. Firestopping caulk shall be 3M Firebarrier CP or approved equal.
- C. The fireproofing materials shall be installed by individuals certified to perform such work. Submit evidence of personnel certifications with electrical equipment brochures.
- D. Where cable trays are shown crossing firewalls, terminate the cable tray on each side of the wall and run the conductors through conduits installed in the wall. Fireproof around the conductors after installation.
- E. Provide mineral wool packing and all other materials recommended by the manufacturer for a complete installation.

3.5 FLASHING

Provide all necessary equipment and flash all roof penetrations in such a manner to ensure that all penetrations are completely sealed and all roof warranties remain in effect. Where there are no roof warranties, the Electrical Contractor shall guarantee the electrical penetrations against leaking for a period of one year from project completion. Employ a professional roofing contractor to perform all flashing.

3.6 PROTECTION

- A. Keep energized equipment covered during all phases of construction. Use enclosures, doors, covers, etc., to ensure that neither personnel nor machinery contact live electrical equipment.
- B. Replace electrical equipment that is damaged during construction.

3.7 DAMAGED FACILITIES

Locate all existing site equipment and utilities prior to beginning construction. Repair all equipment and utilities damaged during construction, or pay for the repair of the equipment and utilities where required by the Owner of the damaged facilities.

3.8 EXCAVATION AND BACKFILL

- A. Excavate in such a manner as to minimize erosion of the soil. Backfill trenches around conduits with fine sand that is free of rocks, clods, and debris. Fill sand a minimum of 4" over conduits. Backfill the rest of the trench in six inch increments, wetted, and tamped. Final compaction shall be a minimum of 95% of that of the adjacent earth. Resurface the grade with the same material as that excavated from the grade whether it be paving, concrete, sod, etc. Repair work shall be comparable to the quality of the original site prior to excavation.
- B. Provide a 3" wide plastic labeled marker tape 12" below grade over all electrical conduits buried underground. Tapes for power circuits shall have a warning such as "Caution: Buried Electrical Line Below." Labels on tapes for telephone, data, cable television, and other facilities shall adequately describe the line over which they are buried.
- C. Provide a #12 AWG tracer wire in each buried conduit run labeled accordingly on each end.

3.9 IDENTIFICATION

- A. Label all switchboards, panelboards, motor starters, disconnects, and motor control centers furnished under Division 26 and other divisions of this contract with engraved rigid plastic nameplates having letters at least ¼ inch high. Nameplates shall be bolted to the enclosure. All labels shall indicate the voltage, number of phases, the AIC rating, and the panelboard and circuit number from which the device is fed.
- B. All circuit breakers in Switchboards, Motor Control Centers, Square D I-Line, and similar panelboards shall be labeled with plastic nameplates (as described in Part A) providing the name of the load served and the ampacity and number of poles of the breaker.
- C. All Square D NQOD, NF and similar panelboards shall have typewritten circuit directories.
- D. Label all conductors at all junction boxes, pull boxes, and terminations with typewritten adhesive markers indicating the panelboard or switchboard name and circuit number of the conductor. Labels shall be Brady Datab or approved equal.
- E. Label all junction boxes and pull boxes with stenciled painted letters containing the name of the panelboard and circuit numbers of the circuits contained within. Use black paint for normal circuits, red paint for emergency circuits, and orange paint for fire alarm circuits. The Contractor may select other colors for junction boxes and pull boxes for auxiliary systems.
- F. Label all conduits in the most likely direction of access and view every 50' and on both ends of each bend with stenciled painted letters containing the name of the panelboard and circuit numbers of the circuits contained within. Use black paint for normal circuits, red paint for emergency circuits, and orange paint for fire alarm circuits. The Contractor may select other colors for conduits for auxiliary systems.

3.10 AS-BUILT DRAWINGS

Maintain one set of drawings during construction for as-built markings. Mark these drawings in red to indicate field changes. Provide these drawings to the Engineer at the end of the construction process. Where required under the General Conditions, Special Conditions, or other portions of this contract, provide revised computer drawn as-built drawings to the Engineer at the end of construction.

3.11 TESTING

- A. Test all systems, or pay testing agencies as required, for compliance with the requirements of all regulatory agencies.
- B. Test the electrical power service ground using a Biddle Three-Terminal Ground Resistance Tester, or approved equal. Grounds shall meet the requirements of the NEC, or of Specification 26 05 26, whichever is more stringent. Test grounds only when the earth is dry. Provide additional ground rods as necessary to achieve the required results.
- C. Prior to making final equipment connections, test all service, feeder, and branch circuit conductors for continuity, phase-to-phase faults, and phase-to-ground faults using a Megger BM100 or approved equal test instrument generating 500 Vdc. Insulation resistance shall be a minimum of 500,000 Ohms between any conductor and ground and 1,000,000 Ohms between any two conductors.
- D. Test other systems as required in their respective specifications.

- E. Provide three bound copies of all test results to the Engineer at the end of the construction process. No Recommendation of Substantial Completion will be granted until all testing reports have been submitted.

3.12 WARRANTY

Provide the Owner a written guarantee to repair, or replace, all faulty equipment and systems for a period of one year from date of Substantial Completion. During this one-year period, a representative of the Contractor shall be on the site actively working on the repairs within 24 hours of the Owner's telephone call. During this period of time, the Owner shall not be charged for any repair work or expenses related with the repair work unless the Contractor can prove that the Owner has damaged the equipment or system.

END OF SECTION

SECTION 260512 - WORK IN EXISTING FACILITIES**PART 1 – GENERAL****1.1 GENERAL**

- A. All work shall be scheduled and coordinated through the General Contractor with the Owner. Provide necessary costs for all work during both normal and premium work hours in bid.
- B. Provide continuous uninterrupted power to all existing facilities to remain during the entire construction process. Any required power outages must be scheduled and approved by the Owner in writing at least three days prior to the outage.

1.2 SCOPE OF WORK

- A. Prior to beginning work, survey existing electrical systems. Document, in writing, signed by the Owner any portions of existing systems that are not operating properly before construction begins. Any electrical systems found inoperable at the end of the construction process that has not been so documented shall be repaired at the end of construction.
- B. Remove electrical equipment in areas being demolished, and electrical equipment feeding other equipment being demolished. Remove raceways and circuitry back to the panel of origination. Where raceways are installed in inaccessible areas, remove conductors back to the panel of origination. Where circuits are not being completely demolished, remove conductors back to a junction box or other connection point outside of the renovated area and recircuit existing electrical equipment that is to remain as required. Where necessary, completely refeed existing electrical equipment that is to remain. It is the intent of this specification that all existing equipment to remain be left completely operable at the end of the construction process.
- C. Survey existing panelboard circuitry and provide new typewritten directories giving complete as-built circuitry information for all panelboards affected by the construction on this project.
- D. Where new circuit breakers are installed in existing equipment, the new circuit breakers shall be manufactured for installation in that equipment. The Amperes Interrupting Current (AIC) Rating shall equal the AIC rating of the existing equipment. A breaker with a lower AIC rating may be used if the contractor provides calculations showing that the breaker rating is sufficient to handle the available fault current. Submit these calculations for approval prior to ordering the breaker. An AIC rating on an existing breaker in the panelboard or switchboard does not demonstrate sufficient proof that the available fault current is less than that breaker's AIC rating.

PART 2 – PRODUCTS

- 2.1 Products shall be selected to maintain or improve the aesthetics of the facility. Gain approval of the Architect or Engineer prior to ordering or installing any electrical equipment or raceway.

PART 3 – EXECUTION

- 3.1 Coordinate the routing of all circuits and the locations of all devices with the Architect or Engineer and the Owner. Shop drawings shall describe completely the locations and elevations of all raceways, boxes, fittings, and equipment.

- 3.2 Where conduits and circuitry are shown concealed in existing walls, ceiling, or floors, employ professional tradesmen to perform cutting, patching, painting, and any other type of finishing required to match the surrounding surfaces. Submit the selected professional's qualifications to the Architect or Engineer for approval prior to beginning work.

END OF SECTION

SECTION 260520 – LOW-VOLTAGE POWER CONDUCTORS AND CABLES**PART 1 – GENERAL**

- 1.1 Provide all circuitry, terminations, splices, connectors, lugs, and other equipment necessary for connection of all equipment requiring electrical connections.
- 1.2 METAL CLAD CABLE.
 - A. Provide all circuitry, terminations, splices, connectors, lugs, and other equipment necessary for connection of metal clad cable where used on this project.
 - B. Metal Clad (MC) Cable may only be used downstream of the homerun junction box. Homeruns shall be routed in conduit to a junction box in the room where work is occurring.
 - C. Each MC cable shall be furnished with a green insulated copper ground wire that is not shown by tic marks on the drawings.

PART 2 – PRODUCTS**2.1 CONDUCTORS**

- A. All electrical conductors shall be soft-drawn annealed copper having 98% conductivity and an insulation rating of 600V.
- B. Conductors shall be UL listed for installation in the raceway in which they are to be installed.
- C. Conductors shall be rated 90 degrees C for use in residential, commercial, industrial, and institutional facilities, and shall be listed as 105 degrees C appliance wire. Conductors shall be listed under UL 83, UL 1063, and UL 758. If XLP or EPR insulation is used, conductors shall be listed under UL 44 and NEMA WC7.
- D. Conductors used for branch circuits, feeders, auxiliary systems, and controls run in dry locations shall have PVC insulation and a Nylon outer jacket. They shall be THHN/THWN or XHHW-2.
- E. Conductors used for branch circuits, feeders, auxiliary systems, and controls run in wet locations shall have XLP or EPR insulation and be type XHHW-2.
- F. Conductors used for operating room isolation panels and associated branch circuits shall be copper stranded conductor having a cross-linked polyethylene insulation or equivalent with a dielectric constant of 3.5 or less. Wire-pulling compounds that increase the dielectric constant shall not be used on the secondary conductors of isolation panels. The isolated circuit conductors shall be identified as follows:

Isolated Circuit #1 – Orange
Isolated Circuit #2 – Brown

For 125 volt, 15 & 20 ampere receptacles: The orange conductor shall be connected to the terminal on the receptacle that is identified in accordance with NEC 200.10(B) for connection to the grounded circuit conductor.

- G. Conductors used for services shall be type SE for aerial services or type USE-2 for underground services.
- H. All conductors shall be stranded. Use ring tongue terminals or spade lugs for connections to terminal screws.
- I. Use minimum #14 AWG conductors for controls and auxiliary circuits. Use larger conductors as required to compensate for voltage drops exceeding 3% of the system voltage.
- J. Conductors shall be furnished in the colors described below unless local ordinances require different colors. Conductors #8 and smaller shall be furnished with colored insulation; conductors larger than #8 shall be taped with the appropriately colored tape for a length of at least 2" at each panelboard, junction box, pull box, load, or other exposed location. Ground conductors shall be taped green for their entire exposed length.

System Voltage	208Y/120V, 3-Phase, 4-Wire	120/240V, 3-Phase, 4-Wire	480Y/277V, 3-Phase, 4-Wire
Phase A	Black	Black	Brown
Phase B	Red	Orange	Orange
Phase C	Blue	Blue	Yellow
Neutral	White	White	Gray
Ground	Green	Green	Green

2.1 METAL CLAD CABLE

- A. Shall be UL listed as type MC. It shall meet the requirements of UL 1569. It shall also be constructed in accordance with NEC 334 C.
- B. Fittings shall be manufactured and UL listed for the application in which they are used.
- C. MC cable shall have an interlocked armor made of aluminum alloy or galvanized steel.
- D. All electrical conductors shall be soft-drawn annealed copper having 98% conductivity and an insulation rating of 600V.
- E. Conductors shall have PVC insulation and a Nylon outer jacket. They shall be THHN/THWN or XHHW-2.
- F. Sizes #10 and #12 shall be solid conductors. Other conductors shall be stranded.
- G. Conductors shall be furnished in the colors described below unless local ordinances require different colors. Conductors #8 and smaller shall be furnished with colored insulation; conductors larger than #8 shall be taped with the appropriately colored tape for a length of at least 2" at each panelboard, junction box, pull box, load, or other exposed location. Ground conductors shall be taped green for their entire exposed length.

System Voltage	208Y/120V, 3-Phase, 4-Wire	120/240V, 3-Phase, 4-Wire	480Y/277V, 3-Phase, 4-Wire
Phase A	Black	Black	Brown
Phase B	Red	Orange	Orange
Phase C	Blue	Blue	Yellow
Neutral	White	White	White
Ground	Green	Green	Green

PART 3 – EXECUTION**3.1 CONDUCTORS**

- A. Install conductors carefully using a minimum of two tradesmen – one feeding the conductors into the conduit, and the other pulling the conductors into the conduit.
- B. **Each branch circuit and multiwire branch circuit shall be run with its own neutral conductor complying with NEC article 200.4.**
- C. Join stranded conductors with appropriate mechanical or compression lugs. Wire nuts may be used for solid conductors only.
- D. Splices shall only be made in approved enclosures. Splices shall not be pulled inside conduits.
- E. Provide cable supports and strain relief connectors as required by the NEC.
- F. Furnish junction boxes, pull boxes, handholes, manholes, etc. as required to ensure that the maximum number of bends allowed by the NEC are not exceeded and to ensure that the cables are not damaged during installation.

3.2 METAL CLAD CABLE EXECUTION

- A. Install MC Cable per the requirements of NEC 334 B.
- B. Join stranded conductors with appropriate mechanical or compression lugs. Wire nuts may be used for solid conductors only.
- C. Provide cable supports as required by the NEC.
- D. Furnish junction boxes, pull boxes, handholes, manholes, etc. as required to ensure that the maximum number of bends allowed by the NEC are not exceeded and to ensure that the cables are not damaged during installation. Do not enclose junction boxes in areas that will be inaccessible at the end of construction.
- E. MC Cable shall be run complete between junction boxes or outlet boxes. Splices are not allowed.

END OF SECTION

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SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**PART 1 – GENERAL****1.1 GENERAL**

Ground all equipment, systems, structures, etc., per the latest edition of the National Electrical Code (NEC).

PART 2 – PRODUCTS

- 2.1 Use mechanical bolted connections in dry locations that are accessible.
- 2.2 Use exothermic welds in wet locations and locations that will be inaccessible at the end of construction.
- 2.3 Ground rods shall be UL listed 3/4" x 10' copper-clad steel ground rods with a minimum copper cladding thickness of 10 mils.

PART 3 – EXECUTION

- 3.1 Ground rods shall be installed with their tops no less than 6" below grade.
- 3.2 Bond ground connections to metal raceways at each end of the conduit run. Provide grounding bushings where required by the NEC. Where cable trays are used, bond the ground conductor to each section and fitting of the tray.
- 3.3 Provide all circuits with an equipment grounding conductor sized per the NEC, or as shown on the drawings. Circuitry shown on drawings does not include the required equipment grounding conductor. Where multiple circuits are run with a common neutral, only one equipment grounding conductor is needed. The equipment grounding conductor shall be furnished with green insulation for conductors #8 AWG and smaller; where larger than #8, the equipment grounding conductor shall be taped green for its entire exposed length.
- 3.4 The grounding electrode conductor(s) shall be bare or shall be colored green for its entire exposed length.
- 3.5 Individual ground conductors shall be installed in PVC conduit sized per the NEC.
- 3.6 Provide receptacles, luminaires, and other devices with a green conductor that bonds the receptacle grounding screw or pigtail, the outlet box grounding screw, and the equipment grounding conductor together.
- 3.7 In health care facilities, where two or more different panel boards serve the same patient-care area, an 8 AWG insulated continuous copper conductor shall bond these different panel boards together.
- 3.8 Telephone, cable television, and other auxiliary systems shall be bonded to the electrical building service ground using a conductor no smaller than #6 AWG.

END OF SECTION

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SECTION 260533 - RACEWAYS, OUTLET BOXES AND JUNCTION BOXES FOR ELECTRICAL SYSTEMS**PART 1 – GENERAL****1.1 GENERAL**

- A. All electrical systems circuitry shall be contained in raceways unless expressly listed in the specification for that system.
- B. Outlet Boxes and Junction Boxes
 - 1. Furnish and install all outlet boxes and junction boxes in accordance with this specification and the requirements of the NEC.
 - 2. Provide outlet boxes for all switches, receptacles, luminaires, telephone jacks, cable jacks, and other devices furnished in this Contract. Provide all necessary hardware including, but not limited to, additional structural support, support brackets, screws, bolts, fixture studs, etc.
 - 3. Outlet boxes and junction boxes in dry locations shall be galvanized stamped steel boxes sized per the latest edition of the National Electrical Code (NEC), but no less than 4" x 4" x 2 1/8" deep. The thickness of the steel shall be in compliance with the requirements of the NEC. Provide stamped steel covers for all junction boxes manufactured to fit the particular box on which it is used.
 - 4. Outlet boxes used in concrete and masonry walls and ceilings shall be of the concrete type manufactured for such applications.
 - 5. Outlet boxes and junction boxes in wet locations shall be of cast metal construction with gasketed waterproof covers. All conduit connections to the boxes shall be made watertight.
 - 6. Wall outlet boxes shall be 4" x 4" x 2 1/8", or larger as required, with plaster rings provided for final flush installation. Plaster rings shall have single-gang openings unless the equipment mounted inside requires two-gang installation.
 - 7. Floor boxes in slabs on grade shall be deep rectangular, cast iron, fully adjustable boxes with brass rings. Covers shall be made of brass and shall provide flip top access to the power or data jacks inside. Screw-on covers are not acceptable unless a flip-top cover is unavailable for the device installed in the floor box. Provide the box sized as required for the number of devices shown installed. Boxes shall be as follows, or approved equal:
 - a. Single-Gang Boxes: Hubbell B2436
 - b. Single-Gang Cover Plates: Hubbell S3825
 - c. Double-Gang Boxes: Hubbell B4233
 - d. Double-Gang Cover Plates: Two Hubbell S3825 Cover Plates
 - e. Triple-Gang Boxes: Hubbell B4333
 - f. Triple-Gang Cover Plates: Three Hubbell S3825 Cover Plates
 - 8. In slabs above grade, use cast iron, semi-adjustable shallow boxes as follows, or approved equal:
 - a. Single-Gang Boxes: Hubbell B2414
 - b. Two-Gang Boxes: Hubbell B4214
 - c. Three-Gang Boxes: Hubbell B4314

9. Receptacles installed in floor boxes shall be as described in Specification 26 09 23, Switches and Receptacles. Data, Telephone, or Combination Data and Telephone Outlets shall consist of Category 5 rated RJ45 jacks mounted in a Hubbell DJOI strap for use under a S3825 flip top cover plate.
10. In existing slabs above grade, use poke thru boxes as follows, or equal:
 - a. Hubbell System One
11. Size all boxes per the requirements of the latest NEC.

1.2 SCOPE OF WORK

A. Raceways

1. Provide all raceways, fittings, couplings, anchors, supports, hangers, etc. for complete raceway systems.
2. Size all conduits per the requirements of the NEC; however, minimum conduit size shall be $\frac{3}{4}$ " nominal trade size.
2. Use Schedule 40 polyvinyl chloride (PVC) conduit for circuits run underground and in slabs on grade level. Provide PVC-coated galvanized rigid steel elbows and PVC-coated galvanized rigid steel conduit for all vertical runs extending to a point at least 6" above grade. Galvanized Rigid steel conduit coated with two complete coats of asphaltum or bituminous paint may be used in lieu of PVC-coated galvanized rigid steel conduit.
3. Use Galvanized Rigid Steel (GRS) conduit for all applications where circuits are run above ground exposed to the weather.
4. Use Intermediate Metal Conduit (IMC) for all branch circuits, feeders, and auxiliary circuits requiring conduit 1 $\frac{1}{4}$ " nominal trade size or larger in dry locations.
5. Use Electrical Metallic Tubing (EMT) for all branch circuits and feeders less than 1 $\frac{1}{4}$ " nominal trade size in dry locations and in slabs above grade level.

PART 2 – PRODUCTS

2.1 Products for Raceways

- A. PVC conduits, fittings, couplings, adapters, and accessories shall be UL listed and approved for use with 90 degree Celsius conductors. The UL label shall be affixed to each ten foot length of conduit and each fitting. Conduits shall comply with NEMA Specification TC-2 and UL 651. Fittings shall comply with NEMA TC-3 and UL 514b.
- B. PVC-coated conduits, fittings, couplings, adapters, and accessories shall be UL listed with PVC as the primary corrosion protection. They shall be hot dipped galvanized rigid steel conduit with threads electro-galvanized after cutting. The conduit shall meet UL 6. The fittings shall meet UL 514B. The PVC coating shall be uniformly applied to the interior and exterior of all conduit and fittings. The coating shall be nominally 2 mils thick. The PVC coating shall extend one pipe diameter or two inches, whichever is less, at every male fitting except unions to fit over the joining female connection. Couplings shall contain a series of longitudinal ribs, 40 mils in thickness, to

protect the coating from damage by tools during installation. PVC-coated conduits shall be ETL Verified PVC-001. Fittings shall be manufactured to the same standard. PVC-coated conduit shall be Robroy Plastibond or approved equal.

- C. GRS conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot-dipped galvanized steel. They shall meet the safety standards of UL 6, and shall be manufactured to ANSI C80.1. Threads shall be hot galvanized after cutting.
 - D. IMC conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot-galvanized steel. Fittings, couplings, adapters, and accessories shall be the same as those for GRS conduit described above. IMC shall meet UL 1242 and ANSI C80.6. Threads shall be hot galvanized after cutting. The inside of the conduit shall be finished with a corrosion-resistant coating.
 - E. EMT conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot galvanized steel and shall be produced in accordance with UL 797 and ANSI C80.3. The inside shall be finished with a corrosion-resistant lubricating coating.
 - F. Conduit fittings used with EMT conduits may be set screw indenter type or compression type. All metallic fittings for IMC and Rigid conduit shall be compression type fittings.
 - G. Flexible metallic conduit shall be constructed of galvanized steel and shall be UL listed as compliant with UL 1 and UL 1479.
 - H. Liquidtight flexible conduit shall be constructed of galvanized steel and shall be coated with a PVC jacket to resist liquids, dirt, grease, and oils. All fittings shall be designed, constructed, and installed to maintain the integrity of the liquidtight connections. Liquidtight flexible conduit shall comply with UL 360.
- 2.2 ACCEPTABLE MANUFACTURERS FOR OUTLET BOXES AND JUNCTION BOXES.
- A. Outlet boxes and junction boxes shall be manufactured by Raco, Steel City, Crouse Hinds, or Appleton.

PART 3 – EXECUTION

3.1 CONDUIT EXECUTION

- A. Conduits run underground shall be buried no less than 24" deep. Services and primary conduits feeding transformers shall be buried no less than 48" deep.
- B. **Do not install conduits in or below ground floor slabs, except for service conduits, site lighting, and where specifically indicated on the drawings.**
- C. Do not install conduits within 6" of the deck where a screw down type roof system is utilized.
- D. PVC-coated conduits may be field-bent provided that manufacturer-approved tools are used. Individuals installing PVC-coated conduits shall be trained for installation by factory-certified trainers. Provide evidence of training with equipment brochures.
- E. Support and install all conduits per the latest edition of the National Electrical Code. Support groups of conduits with electrical strut supported by threaded rods anchored to the building

structure. Supports shall be designed to hold no less than twice the weight of the conduit and conductors to be supported plus an additional 250 pounds at midspan.

- F. All conduits shall be grouped and run parallel to each other and to building walls.
- G. All conduits shall be assembled according to the manufacturer's instructions.
- H. Conduits run underground shall be assembled to be watertight.
- I. Cap all conduits during installation. Pull a mandrel sized for that conduit and a cleaning brush through each conduit before installation of any conductors.
- J. Conduits that are obviously damaged and field bends that are obviously out of round shall be replaced.
- K. Provide final connections to equipment with flexible metallic conduit. In wet or damp locations, use liquidtight flexible conduit. Flexible conduit shall not exceed 72".
- L. Terminate conduits entering boxes with a locknut inside the box and a locknut outside the box. Provide protective bushings on all conduit threads. Use watertight hubs where conduit terminations are exposed to moisture.
- M. Use grounding bushings on all feeder conduits, all underground conduits, and where required by the National Electrical Code.
- N. Conduits shall be run no closer than 12" to hot water pipes.
- O. Where conduits are run through the ceiling and are required to make connections to equipment within the room that is not located near a wall, support the conduit from the structural ceiling and provide a flange bolted to the floor. Install a tee conduit fitting in the vertical run of conduit, and make the connection to the equipment with a piece of flexible conduit extending from the tee conduit fitting to the equipment.
- P. Provide expansion fittings where conduits cross building expansion joints. Provide grounding jumpers between the conduits.
- Q. Provide EMT conduit sleeves where conduits pass through walls, floors, or footings sized a minimum of two nominal trade sizes larger than the conduit that must pass through the sleeve.
- R. Equip all empty conduits with a pullwire or string capable of withstanding 200 pounds of pulling tension.

3.2 Execution for Outlet Boxes and Junction Boxes.

- A. All devices shall be flush mounted unless specific written permission is obtained from the Engineer for a particular device in a particular location.
- B. Install outlet boxes in walls, and provide plaster rings such that wall finish contractor's finish is flush against the edge of the plaster ring. Workmanship will not be accepted where the hole in the wall shows behind the cover plate, or the wall finish is uneven or unpainted at the edge of the cover plate.

- C. Use round or square ceiling outlet boxes as required for the device being installed. The ceiling shall be finished flush against the box; the fixture shall completely cover the box and mount tight against the ceiling. Coordinate the requirements of the fixture prior to installing the box.
- D. Provide junction boxes, pull boxes, and conduit fittings where required by the NEC to limit the number of bends in the raceway, and where required to prevent damage to conductors due to long runs.
- E. Junction boxes and pull boxes installed in the ground outside shall be Quazite Composolite or approved equal. Mount the boxes over 24" of washed gravel fill. If splices are to be made inside the boxes, the boxes shall be of the type furnished with a bottom, and all conduit connections shall be watertight. In addition, all conductor splices shall be made watertight using an appropriate splice kit as manufactured by 3M, or an approved equal.

END OF SECTION

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SECTION 260923 - SWITCHES AND RECEPTACLES**PART 1 – GENERAL**

Furnish and install all switches and receptacles in accordance with this specification and the requirements of the NEC.

PART 2 – PRODUCTS**2.1 ACCEPTABLE MANUFACTURERS**

Switches and receptacles shall be manufactured by Hubbell, Cooper Wiring Devices, Leviton, or Pass & Seymour.

2.2 GENERAL

- A. Switches and receptacles shall be specification grade. They shall have ampacity and voltage ratings suitable for the application in which they are used.
- B. Consult architect or engineer for device colors prior to ordering devices.
- C. Provide brushed stainless steel cover plates for all devices. A single cover plate shall cover all devices in one box.
- D. Light switches shall be 20 Ampere, 120-277V back-wired and side-wired toggle switches. They shall be rated up to 2 HP at 240V. Each switch shall be equipped with a grounding screw. Switches shall be Hubbell CSB series or approved equal.
- E. Duplex NEMA 5-20R receptacles shall be Hubbell HBL 5362A or approved equal.
- F. Duplex GFI NEMA 5-20R receptacles shall be Hubbell HBL GF5362A or approved equal.
- G. Weatherproof while-in-use cover plates shall be Teddico #34017-7 or approved equal. Cover plates shall be single gang, lockable, and constructed of heavy duty die cast metal.
- H. All 125V, 15 and 20 ampere receptacles installed in dwelling units shall be of the tamper-resistant type.
- I. All 15 and 20 ampere, 125 and 250V non-locking receptacles installed in wet or damp locations shall be listed as the weather-resistant type.
- J. Devices furnished in this Contract, but not listed above, shall be of the same standard of quality as those items listed.

PART 3 – EXECUTION

- 3.1 Flush mount all devices unless specific written permission is obtained from the Engineer for a particular device in a particular location.
- 3.2 Install all devices vertically unless the drawings specifically state that the particular device should be mounted horizontally.
- 3.3 Install receptacles with the ground slot up.

END OF SECTION

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SECTION 260926 - VACANCY SENSORS**PART 1 - GENERAL**

- 1.1 Furnish and install a complete system of Vacancy sensors as shown on the drawings and as specified herein to comply with IECC 2012. The drawings are provided to show the general scope of the work, and show the absolute minimum components required. Actual system components, quantities, and locations shall be determined by the motion detector vendor and provided to the Contractor with the installation shop drawings.
- 1.2 The Contractor and Sales Representatives are advised to take notice of specified component characteristics when attempting to select and propose substitutions. It is highly unlikely that substitutions on a one-for-one component basis will produce results that provide acceptable system performance.
- 1.3 Provide all power packs, hardware, software, devices, circuitry, and other components, material, and labor required to install, configure, and test the entire system to the satisfaction of the Architect, Owner, and Engineer.
- 1.4 Submit six sets of manufacturer's cut sheets describing completely all equipment, and six sets of shop drawings showing all circuitry including terminal-to-terminal connections.
- 1.5 The wiring diagrams on these drawings are based on our best interpretation of the manufacturer's data that was available at the time of design; however, they shall not be used for system installation and configuration. The controls equipment vendor is expected to be thoroughly knowledgeable of the equipment that is being proposed, and shall provide detailed shop drawings tailored for each circuit and lighting zone on the project. General manufacturer's data sheets shall not be acceptable. The shop drawings shall be suitable for the installing electrician to use for complete installation of the circuitry without referring to data sheets or installation manuals for connection of lighting control equipment. These requirements shall be followed whether the specified equipment, or products of other manufacturers, is provided.

PART 2 - PRODUCTS

- 2.1 Hallway Vacancy sensors: Vacancy sensors used in the hallways shall be passive infrared, ceiling-mounted units with a coverage of 6' x 130'. They shall be Sensor Switch HW13 WV BR or approved equal.
- 2.2 Wall mounted LED lighting controls shall be 0-10V dimmer/vacancy sensor type equal to Lutron MS-Z101-V-XX
- 2.3 Wall mounted lighting controls shall be dual technology (ultrasonice/passive infrared) dual relay vacancy sensor type equal to Lutron MS-B202-V-XX
- 2.4 Areas up to 500 Square Feet: Ceiling mounted Vacancy sensors used in areas up to 500 square feet shall be dual technology infrared and passive infrared, ceiling-mounted units with a 360 degree, 500 square foot coverage.
- 2.5 Power Packs: Power packs shall be of the same manufacturer as the Vacancy sensors. Each shall be capable of controlling a 20 ampere circuit. They shall be rated for operation at the voltage of the system on which they will be used.
- 2.6 Circuitry: Provide control circuitry as required by the manufacturer for optimum system operation, but no less than the following: Control cables shall be 3-conductor #22 AWG copper with an overall jacket.

Adjust conductor sizes as required to overcome unacceptable voltage drop.

PART 3 - EXECUTION

- 3.1 Vacancy sensors shall be provided so that their coverage areas overlap and there are no dead zones in the rooms where persons may stand and not be detected.
- 3.2 Vacancy Sensors shall be set for "manual on/automatic off" operation.
- 3.3 All work shall be done by qualified system technicians.
- 3.4 Wiring, including control wiring, shall be in Raceways meeting Specification 260533.
- 3.5 Guarantee workmanship and material for a period of one year after final acceptance. During the warranty period, repair or replace faulty equipment at no cost to the Owner for labor, material, or expenses.
- 3.6 Upon completion of job, test entire system. After testing submit a certificate to the Architect stating verification of the following:

PART 4 – CLOSE-OUT DOCUMENTS

- 4.1 Provide the following documents to the Architect for delivery to the Owner at the time of substantial completion:
 - A. Written Guarantee
 - B. Two sets of data prepared by the manufacturer for each item of electrical equipment completely describing each piece of equipment. The data shall include parts lists, a description of operation, shop drawings, wiring diagrams, maintenance procedures, and other literature required for operation and maintenance of equipment.
- 4.2 Instruct the Owner on system operational procedures. Notify the Owner and Architect at least one week in advance of the training session. Provide written step-by-step instructional material.
- 4.3 Notify the General Contractor that you are to present during the Pre-final Inspection. During that inspection, demonstrate all system functionality and capabilities; remove cover plates and panels covers as required to show the quality of the installation. The Owner, Architect, and Engineer reserve the right to reject unsuitable workmanship or performance.

END OF SECTION

SECTION 262400 - PANELBOARDS**PART 1 – GENERAL**

- 1.1 Furnish and install all panelboards, complete with their circuit breakers, phase buses, neutral buses, ground buses, structural supports, and other equipment necessary for complete systems.
- 1.2 The equipment vendor shall perform all calculations necessary and provide complete Arc Flash Labels as required by the National Electrical Cod (NEC) and the drawings. Note: The drawings typically require more detail than required by the NEC.

PART 2 – PRODUCTS**2.1 GENERAL**

- A. Panelboards shall be designed, manufactured, and tested to be in compliance with NEMA PB 1, UL 50, UL 67, UL 489, NFPA 70, and the ASTM.
- B. Circuit breakers shall be designed, manufactured, and tested to be in compliance with NEMA AB 1, UL 489, and Federal Specification W-C-375B/GEN.
- C. Panelboards shall be UL listed for service entrance where used for that purpose.
- D. Panelboard ampere interrupting current (AIC) ratings shall equal the lowest rated device in the panelboard. Provide panelboards with the AIC ratings shown on the Contract Drawings. Buses shall be braced to withstand the AIC rating shown on the drawings. Series ratings shall only be used where shown on the panelboard schedules.
- E. All panelboards shall be furnished with dead-front, door-in-door construction.
- F. Lug locations shall be determined during the creation of shop drawings for proper arrangement with the raceway system.
- G. Buses shall be constructed of 98% conductivity copper or equivalently rated aluminum.
- H. Panelboard enclosures shall be NEMA 1 when they are to be mounted indoors, and NEMA 3R when they are to be mounted outdoors. Provide special enclosures where shown on the Contract Drawings.

2.2 ACCEPTABLE MANUFACTURERS

Panelboards shall be manufactured by Siemens, Square D, General Electric, or Cutler Hammer.

2.3 PANELBOARD CLASSES

- A. Power distribution panelboards shall be available with mains and branch devices up to 1200 amperes. AIC ratings shall be available up to 200,000 Amperes. Power distribution panelboards shall be equipped with a nameplate containing the appropriate system voltage, number of wires, and number of phases for the system on which they are installed.
- B. In 480Vac and less applications where a main breaker not exceeding 600 Amperes is required, the AIC rating does not exceed 65,000 Amperes, and no branch breakers exceed 125Amperes, Square D NF and equivalent panelboards may be used.

- C. In 480Vac and less applications where a main breaker not exceeding 225 Amperes is required, the AIC rating does not exceed 14,000 Amperes, and no branch breakers exceed 100Amperes, Square D NEHB and equivalent panelboards may be used.
- D. In 240Vac and less applications where a main breaker not exceeding 400 Amperes or main lugs not exceeding 600 Amperes is required, the AIC rating does not exceed 22,000 Amperes, and no branch breakers exceed 125 Amperes, Square D NQ and equivalent panelboards may be used. Loadcenters shall not be acceptable!

2.4 CIRCUIT BREAKERS

- A. Circuit breakers shall be of the bolt-on type (except for those used in ILINE panelboards and switchboards). Loadcenter, plug-in circuit breakers shall not be acceptable unless specifically indicated on the drawings. They shall be thermal magnetic, molded-case with quick-make, quick-break contact action. They shall have thermal and magnetic tripping elements on each pole. Breakers with multiple poles shall have common tripping of all poles. Circuit breaker ampere ratings shall be stamped on the handle. Interrupting ratings of the circuit breakers shall be equivalent to the specified AIC rating of the panelboard. Breakers handles shall reside in a position between "ON" and "OFF" after a trip condition. Breakers shall be rated HACR when used for heating, air-conditioning, and refrigeration; HID when used with High Intensity Discharge fixtures; and shall be rated SWD when used for switching duty.
- B. Circuit breaker sizes for motor loads are based on Square D recommendations for use of their breakers at the motor horsepowers listed on the mechanical drawings. If equipment is used other than Square D, adjust breaker sizes per the manufacturer's recommendations.
- C. Each circuit breaker supplying a multiwire branch circuit shall be installed with a manufacturer supplied handle tie to simultaneously disconnect all ungrounded conductors. Each multiwire branch circuit shall comply with NEC article 210.4.
- D. Circuit breakers with slash ratings, such as 120/240V or 480Y/277V, shall be used in solidly grounded systems where the nominal voltage of any conductor to ground does not exceed the lower of the two values of the breaker's voltage rating and the nominal voltage between any two conductors does not exceed the higher value of the circuit breaker's voltage rating.
- E. Circuit breakers with straight voltage ratings, such as 240V or 480V, shall be used in systems other than solidly grounded systems (Corner-Grounded Delta, Ungrounded, Impedance Grounded, etc.) where the nominal voltage between any two conductors does not exceed the circuit breaker's voltage rating. A two-pole circuit breaker shall not be used to protect a three-phase, Corner-Grounded Delta system unless the circuit breaker is marked 1 Φ -3 Φ .

PART 3 – EXECUTION

- 3.1 Install panelboards in complete compliance with all manufacturers' installation instructions.
- 3.2 Install conductors neatly in panelboards. Group and tie-wrap circuits that share a common neutral.
- 3.3 Number circuits exactly as shown on the contract drawings.

END OF SECTION

SECTION 262800 - DISCONNECTS AND SEPARATELY-MOUNTED CIRCUIT BREAKERS**PART 1 – GENERAL**

Furnish and install all disconnects and separately mounted circuit breakers as shown on the drawings, specified herein, and required by the NEC.

PART 2 – PRODUCTS**2.1 GENERAL**

- A. Disconnects shall be of the heavy-duty type, and shall be UL listed for service entrance use. They shall meet or exceed the requirements of NEMA Standard KS1. Provide fuses sized to appropriately protect the load served. Equipment manufacturer's recommendations shall take precedence over the Contract Drawings.
- B. Fuses shall be dual element, time-delay, Class J fuses. They shall be Bussman Low-Peak or approved equal.
- C. Circuit breakers shall be thermal magnetic, molded-case with quick-make, quick-break contact action. They shall have thermal and magnetic tripping elements on each pole. Breakers with multiple poles shall have common tripping of all poles. Circuit breaker ampere ratings shall be stamped on the handle. Interrupting ratings of the circuit breakers shall be equivalent to the specified AIC rating of the panelboard. Breakers handles shall reside in a position between "ON" and "OFF" after a trip condition. Breakers shall be rated HACR when used for heating, air-conditioning, and refrigeration; HID when used with High Intensity Discharge fixtures; and shall be rated SWD when used for switching duty.
- D. Circuit breaker sizes for motor loads are based on Square D recommendations for use of their breakers at the motor horsepower listed on the mechanical drawings. If equipment is used other than Square D, adjust breaker sizes per the manufacturer's recommendations.
- E. Circuit breakers with slash ratings, such as 120/240V or 480Y/277V, shall be used in solidly grounded systems where the nominal voltage of any conductor to ground does not exceed the lower of the two values of the breaker's voltage rating and the nominal voltage between any two conductors does not exceed the higher value of the circuit breaker's voltage rating.
- F. Circuit breakers with straight voltage ratings, such as 240V or 480V, shall be used in systems other than solidly grounded systems (Corner-Grounded Delta, Ungrounded, Impedance Grounded, etc.) where the nominal voltage between any two conductors does not exceed the circuit breaker's voltage rating. A two-pole circuit breaker shall not be used to protect a three-phase, Corner-Grounded Delta system unless the circuit breaker is marked 1 Φ -3 Φ .
- G. Disconnect and individually-mounted circuit breaker ampere interrupting current (AIC) ratings shall equal the rating of the panelboard from which they are fed unless otherwise noted.
- H. Buses shall be constructed of 98% conductivity copper or equivalently rated aluminum.
- I. Switches shall be horsepower rated where used to serve motors.
- J. Enclosures shall be NEMA 1 when they are to be mounted indoors, NEMA 3R when they are to be mounted outdoors, and NEMA 4X where they are subject to washdown. Provide special enclosures where shown on the Contract Drawings.

2.2 ACCEPTABLE MANUFACTURERS

Disconnects and separately-mounted circuit breakers shall be manufactured by Siemens, Square D, General Electric, or Cutler Hammer.

PART 3 – EXECUTION

- 3.1 Install disconnects and individually-mounted circuit breakers in complete compliance with all manufacturers' installation instructions. Where necessary, provide structural supports and bracing for installation.
- 3.2 Disconnects are to be surface-mounted.
- 3.3 Individually-mounted circuit breakers are to be flush-mounted unless otherwise shown.

END OF SECTION

SECTION 265100 - LIGHTING**PART 1 – GENERAL**

- 1.1 Provide all lighting fixtures (luminaires), lamps, end caps, connectors, fittings, structural support members, supports, brackets, etc., for a complete and operable lighting system.
- 1.2 Prior to submitting electrical equipment brochures for review and approval, coordinate with the General Contractor and verify that the fixtures are appropriate for the ceiling types in which they are shown to be installed. Also verify that ballast voltage on the submittals is appropriate for the electrical system on which the fixtures are to be installed (regardless of voltage listed in the part number in the Fixture Schedule). Submit with equipment brochures a certificate stating that these items of coordination have been completed.
- 1.3 Provide photometric calculations where luminaires are proposed for substitution.
- 1.4 Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- 1.5 Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on construction, dimensions, ratings, finished, mounting requirements, listing, service conditions, and installed accessories. Include model number nomenclature clearly marked with all proposed features. Where the part number indicates components not shown on cut sheet, provide supporting cut sheet data for the part number. **Applicable data for fixtures proposed shall be highlighted – including any special notes about application!**

PART 2 – PRODUCTS**2.1 LUMINAIRES**

- A. Luminaires are shown in the Luminaire Schedule on the drawings to establish a standard of quality. Manufacturer's names and model numbers shall not be interpreted as a proprietary specification. Notify the engineer at least two weeks prior to bid if an equivalent for a fixture listed in the schedule is not readily available,
- B. Provide the appropriate trim types, lenses, and accessories for proper installation in the area shown on the drawing. Coordinate with the ceiling contractor during the creation of shop drawings to ensure that fixtures are appropriate for the type of ceiling being installed.

2.2 LAMPS

LED lamps shall be LM79 and LM80 tested.

2.3 LED DRIVERS

- A. General Requirements:
 1. Operate for at least 50,000 hours at maximum case temperature and 90 percent non-condensing relative humidity.
 2. Provide thermal fold-back protection by automatically reducing power output (dimming) to protect LED driver and LED light engine/fixture from damage due to over-temperature conditions that approach or exceed the LED driver's maximum operating temperature at calibration point.

3. UL 8750 recognized or listed as applicable.
4. Class A sound rating; Inaudible in a 27 dBA ambient.
5. Demonstrate no visible change in light output with a variation of plus or minus 10 percent change in line-voltage input.
6. LED drivers of the same family/series to track evenly across multiple fixtures at all light levels.
7. Offer programmable output currents in 10 mA increments within designed driver operating ranges for custom fixture length and lumen output configurations, while meeting a low-end dimming range of 100 to 1 percent or 100 to 5 percent as applicable.
8. Employ integral fault protection up to 277 V to prevent LED driver damage or failure in the event of incorrect application of line-voltage to communication link inputs.
9. LED driver may be remote located up to 100 feet (30 m) from LED light engine depending on power outputs required and wire gauge utilized by installer.

B. Driver Control:

1. Provide integral fault protection to prevent driver failure in the event of a mis-wire.
2. Operate from input voltage of 120 V through 277 V at 50/60 Hz.
3. Drivers and their associated controls shall be coordinated to ensure they are compatible.

2.4 EMERGENCY DRIVERS

- A. Emergency Drivers: Emergency drivers shall consist of an automatic power failure device, a test switch, and a pilot light that is visible from outside of the fixture. They shall contain a fully automatic solid state charger in a self-contained power pack. The fixture shall be factory wired in a manner that will allow the emergency lamps to be switched while still maintaining charging power to the battery. Wiring Diagrams shall be furnished with the fixture showing switching connections. The battery shall be of the sealed electrolyte type with the capacity to provide power to the lamps provided for a minimum of 90 minutes according to the following formula:

Delivered Lumens = $1.25 \times \text{Output Power of Emergency Driver} \times \text{Lumen per Watt rating of the Luminaire}$

Note: See Fixture Schedule on Drawings for specified Emergency Driver

The battery shall be able to operate unattended with no maintenance for a period of no less than five years. Emergency ballasts shall be fully compatible with solid state ballasts. Battery packs shall be mounted inside the fixture unless remotely mounted ballasts are shown on the drawings, or unless the fixture is of a type that does not have room for internally mounted battery packs.

2.5 SUPPORTS

- A. Provide all structural members necessary to support fixtures in locations shown on the contract drawings. Submit mounting and support details to the Architect or Engineer for approval with the project shop drawings. Notify the General Contractor prior to bid of any structural work that will be required to support the fixtures.

- B. Provide hangers, cords, stems, etc., where required. Coordinate with the Architect or Engineer for proper stem lengths prior to ordering fixtures.
- C. Support the recessed light fixtures at all four corners of the fixture.
- D. Provide clips for fixtures installed in lay-in ceilings. Clips shall be equal to Erico Caddy clips # 515 or #515A.

PART 3 – EXECUTION

- 3.1 Raceways for lighting systems in accessible ceilings shall be run to junction boxes mounted in locations that do not interfere with the ceiling installation, the luminaire installation, or other building systems. Provide final connections to fixtures using conductors in flexible conduit. Flexible conduit whips shall not exceed six feet in length.
- 3.2 All recessed fixtures shall be mounted with their trims flush against the ceiling.
- 3.3 Comply completely with all manufacturers' installation instructions.
- 3.4 Fixtures shall be warranted for a period of five years after beneficial occupancy.

END OF SECTION

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DIVISION 27
COMMUNICATIONS

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SECTION 273000 - TELEPHONE AND DATA SYSTEMS**PART 1 – GENERAL**

- 1.1 Provide complete telephone and data systems in accordance with this specification and the contract drawings. All systems shall be furnished and installed to meet or exceed EIA/TIA Category 6 Standards.
- 1.2 All new wiring on this project shall conform to the EIA TIA 568A T568A scheme.
- 1.3 Prior to ordering equipment, provide six sets of manufacturer's cut sheets to the Architect or Engineer for the equipment to be installed. Also submit shop drawings showing the floor plan with all wiring tag identification and conduit and cable routing. Do not order any equipment without receiving submittals and shop drawings that have been reviewed and approved by the Engineer.
- 1.4 Contractors furnishing and installing telephone and data system components shall be regularly involved in furnishing and installing systems of the type specified. They shall have installed five systems similar in size and scope within the past six months. The Telephone and Data System Contractor shall pull the cable as well as install all jacks and make all other system terminations.

PART 2 – PRODUCTS

- 2.1 Outlet Boxes: Provide outlet boxes in accordance with Specification 260533.
- 2.2 Plaster Rings: Plaster rings shall be furnished to provide single-gang openings in outlet boxes unless otherwise noted.
- 2.3 Raceways: Provide raceways in accordance with Specification 260533.
- 2.4 Jacks: Provide outlet boxes with a strap containing the number of Jacks indicated on the drawings. Outlet jacks shall be 8-position, 8-conductor, RJ-45 jacks that are multivendor supportive accepting most phone and data plugs. Jacks shall have gold-plated (50 microinches minimum) contacts with 110 connections on the back. The jacks shall snap in the straps. The straps shall be colored to match the switches and receptacle color selected by the Architect. The straps shall be covered by a stainless steel wallplate identical to those of the receptacles and switches. Telephone outlet jacks shall be yellow; data jacks shall be blue.
- 2.5 Fiber Optic Cabling: Cable shall be a 12 strand 62.5/125 micron single mode. Bandwidth shall be 200MHz @ 850nm.
- 2.6 Cable: All cable shall be Category 6 rated and shall conform to or exceed the EIA/TIA 578 Commercial Building Wiring Standard, Horizontal Cable Section and the EIA/TIA Technical Systems Bulletin 36 for Unshielded Twisted Pair Cables. Other standards supported shall include IEEE 802.3, Ibase5, 10BASE-T; IEEE 802.5, 4 Mbps, 16 Mbps (328 ft/100m), 104 Workstations, proposed ANSI X3T9.5 TP-PMD requirements for UTP at 100 Mbps, and 155 MB ATM. Cabling shall be UL listed. Telephone cables shall be yellow; data cables shall be blue. All Cable shall be plenum rated.
- 2.7 Telephone and Data Backboard (TDBB): Wall mount a ¾" x 4' x 8' sheet of plywood, primed and painted with two coats of fire retardant paint of the color and finish selected by the Architect. Provide a ¼" x 4" x 17.75" copper ground block (Erico Eritech TMGB-A18L23PT or approved equal) on the wall, bond a #6 AWG copper conductor to the ground block with a two hole

compression lug and run the #6 AWG ground wire to the electrical power system ground. Bond the #6 AWG ground wire to the power system electrode using an exothermic weld.

- 2.8 Punchdown Blocks: Telephone cables shall terminate at the Telephone & Data Backboard on Punchdown Blocks. Telephone Cabling shall be terminated on 110 punchdown blocks maintaining the Category 6 rating. Furnish punchdown blocks for all telephone outlets in this contract plus 25% additional outlets.
- 2.9 Patch Panels: Data Cables shall terminate at the Telephone & Data Backboard in patch panels. Provide a patch panel (or panels) at each TDBB to accommodate all cabling plus 15% spare capacity. Provide crossconnecting cables as required to interconnect the patch panels providing the Owner a single connection point for a connection to a server.
- 2.10 Racks: Provide a 19" rack for mounting of the patch panels. The rack shall be mounted on the TDBB.

PART 3 – EXECUTION

- 3.1 Provide a 1" conduit extending from each outlet box to a point above the nearest accessible ceiling. Terminate the conduit with a protective bushing.
- 3.2 Route conductors from the outlet box, above the lay-in ceilings, and to the telephone and data backboard. Group, tie-wrap, and support the conductors from the structural ceiling above the lay-in ceiling. Provide conduit for sleeves where cables pass through areas with hard ceilings.
- 3.3 Provide a minimum of two data cables to each data outlet or combination telephone/data outlet. Provide one cable to each telephone outlet.
- 3.4 Mount plywood backboard securely to wall framing members. The bottom of the backboard shall be 6" above the finished floor.
- 3.5 Provide a #6 copper ground wire in 1" PVC conduit from the Telephone and Data Backboard to the Building Power System Ground.
- 3.6 Service Conduits: Provide two 4" PVC conduits with long radius elbows from the Telephone and Data Backboard to the telephone company right of way. Conduits bends shall contain radii that are no less than 10 times the conduit diameter. Furnish conduits with pullstrings. Stub conduits up 4" above the floor at the Telephone and Data Backboard and cover with plastic caps. Do not glue the caps on the conduits. Seal conduits below grade to prohibit the entrance, of dirt, water, and gases. Service conduits shall be buried 24" to 36" below grade. Mark the end of the conduits by placing a vertical stick of conduit from the end of the conduit vertically to a point at least 12" above grade. Provide physical protection as well as warning tape attached to stakes around the marker.
- 3.7 Fiber Optic: Terminate all fiber optic strands at the rack in a fiber optic termination box.
- 3.8 Equip all spare conduits with a pullwire or string capable of withstanding 200 pounds of pulling tension.
- 3.9 Uniquely identify and label all cables at each end using EIA/TIA Standards. Provide engraved or professionally stenciled label markings on the faceplate beside each jack.
- 3.10 Test each cable for opens, shorts, correct pairs, crossed wiring, and proper termination using a CT200 tester from Atcom Services, Inc. or approved equal. Replace any cable that is unable to

pass the tests. Provide a written log of the test results of each cable to the Engineer at the prefinal inspection. Demonstrate testing of any cables selected by the Engineer.

END OF SECTION

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DIVISION 28
ELECTRONIC SAFETY AND SECURITY

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SECTION 281301 – ACCESS CONTROL SYSTEM CONDUITS**PART 1 - GENERAL**

- 1.1 Provide a complete system of raceways, power, and fire alarm connections for the Access Control system including, but not limited to conduits, raceways, receptacles, outlet boxes, circuitry, and pullwires.

PART 2 – PRODUCTS

- 2.1 Outlet boxes shall be furnished per Specification Section 260533.
- 2.2 Raceways shall be furnished per Specification Section 260533. Minimum conduit size shall be ¾" nominal trade size unless noted otherwise on drawings.
- 2.3 The Access System Control Panel, devices, and circuitry shall be provided and installed by others outside of this project.

PART 3 - EXECUTION

- 3.1 Coordinate with the Access Control System vendor for the system fire alarm connection. The Access System control panel shall be configured to accept a single input from the fire alarm control panel to release each magnetically locked door upon an alarm condition. Provide all conduit, raceways, and relays required to release the magnetic doors upon an alarm condition.
- 3.2 Provide an outlet box and conduit with pullstring to above the accessible ceiling for each card reader, push-to-exit pushbutton, motion detector, etc. Verify the mounting height, box type, and box quantities with the Access Control System vendor prior to installation.
- 3.3 All devices shall be mounted with their boxes flush in the walls.

END OF SECTION

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SECTION 283101 - FIRE ALARM SYSTEM**PART 1 – GENERAL****1.1 GENERAL**

- A. Furnish and install all components necessary to expand the existing fire alarm system to include the items shown on the drawings. The expanded system shall be a complete and operable fire alarm system in accordance with the Contract drawings and as specified herein.
- B. The items added in the existing building should be added to the appropriate existing zone for that area of the building.
- C. Comply completely with the latest edition of all applicable federal, state, and local codes including, but not limited to the following:
 - 1) National Electrical Code (NFPA 70)
 - 2) Life Safety Code (NFPA 101)
 - 3) National Fire Alarm Code (NFPA 72)
 - 4) The Standard Building Code
 - 5) ANSI A17.1, "Elevators, Dumbwaiters, Escalators, and Moving Walks"

1.2 SCOPE OF WORK

- A. Provide all enclosures, hardware, software, devices, and all other components, material, and labor required to install, configure, and test the entire system to the satisfaction of the Engineer and all authorities.
- B. All components of the system shall be manufactured by the same company. The system and its components shall be approved by UL and Factory Mutual.
- C. All system components shall be installed by a franchised distributor of the fire alarm system components having a repair and service department on call 24 hours a day, seven days a week. The repair and service department shall be located within 150 miles of the project.
- D. Submit complete shop drawings showing all devices including mounting locations and heights and terminal-to-terminal connections.
- E. **Employ an independent third party testing agency that shall be responsible for certification of the system and to review the shop drawings to ensure compliance with the contract documents and all applicable codes.**

PART 2 – PRODUCTS

- 2.1 Provide additional battery capacity as required to operate the control panel without normal power for 24 hours, and then to alarm the panel continuously for at least five minutes. Submit battery sizing calculations with the manufacturer's cut sheets and shop drawings. Any new batteries required by the new equipment shall be NiCad.
- 2.2 All devices shall be completely compatible with the existing system.
- 2.3 Pull stations shall be of metallic construction. They shall be furnished with lexan shields and warning horns.

- 2.4 Horns shall be rated a minimum of 85 dB at 10'.
- 2.5 Strobes shall have a nominal rating of at least 75 Cd.
- 2.6 Smoke detectors, except under raised computer floors, shall be of the ionization type.
- 2.7 Combination horn-strobe and speaker-strobe units shall meet the specified requirements of the individual horns, speakers, and strobes.
- 2.8 Provide duct detectors in all air units.
- 2.9 Provide all necessary relays and circuitry, and shut down all air units upon an alarm condition of the fire alarm system.
- 2.10 Provide all necessary relays and circuitry, and release magnetic locks upon an alarm condition of the fire alarm system.
- 2.11 Provide all necessary relays and circuitry, and release door hold-open magnets upon an alarm condition of the fire alarm system.
- 2.12 Conductors shall be #14 AWG copper rated THHN/THWN. Provide larger conductors where required to compensate for voltage drop.
- 2.13 All conductors shall be enclosed in raceways per Specification 260533.

PART 3 – EXECUTION

- 3.1 All components and circuitry shall be assembled and installed per the requirements of all applicable codes and the manufacturer's recommendations.
- 3.2 All devices shall be mounted with their boxes flush in the walls.
- 3.3 Smoke detectors shall be mounted at least 36" away from supply vents.
- 3.4 All circuitry shall be in concealed conduit sized per the NEC, but no less than ½" EMT.
- 3.5 The Fire Alarm System Contractor shall test all system components, including each smoke detector and duct detector prior to the pre-final inspection. All systems shall be completely operable prior to the request for a pre-final inspection. Fire Alarm System factory-trained technicians shall be present at the pre-final inspection to test the system in the presence of the Owner, Architect, and Engineer.

END OF SECTION

DIVISION 31
EARTHWORK

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SECTION 312318: EARTHWORK FOR STRUCTURES

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Division 1 Sections

1.2 REFERENCES

ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils.

ASTM D698 – Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).

ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.

ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.3 DEFINITIONS

- A. Granular Subbase: Fill directly beneath slabs-on-grade.
- B. Backfill: Fill immediately behind foundation elements or retaining walls.
- C. Structural Fill: Fill under the structure other than the granular subbase.

1.4 SUBMITTALS

- A. Upon request, submit soil test reports performed by the Structural Testing/Inspection Agency.

1.6 SURVEY

- A. Prior to construction, have structure location staked and certified by a licensed surveyor. If discrepancies between actual lines and elevations exist, notify Architect/Structural Engineer before proceeding with layout of structure.

1.7 SUBSURFACE CONDITIONS

- A. Copies of a subsurface investigation of the site will be made available upon request. The data is not intended as a representation or warranty of the continuity of such conditions. Owner will not be responsible for interpretation or conclusions drawn by the Contractor. The data is made available for the convenience of the Contractor and is not guaranteed to represent all conditions that may be encountered.
- B. Contractor may examine the site and make his own subsurface explorations at no additional cost to the Owner. Notify Owner prior to making any subsurface explorations.

1.8 EXISTING UTILITIES

- A. Locate existing underground utilities by careful hand excavation. If utilities are to remain in place, provide protection from damage during construction operations.
- B. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Do not interrupt existing utility service facilities occupied and used by Owner or others, unless written permission is given by the Architect and then only after temporary utility services have been provided.
- C. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Architect immediately for directions.
- D. Repair damaged utilities to satisfaction of utility owner.

1.9 NOTICE

- A. Notify the Architect/Structural Engineer 48 hours prior to the beginning of any excavation work.

PART 2 PRODUCTS

2.1 GRANULAR SUBBASE

- A. Granular Subbase: Sound and free-draining, such as sand, gravel or crushed stone with less than 10% passing the 200 sieve. Maximum diameter shall be 1-1/2 inches.

2.2 BACKFILL

- A. Backfill: Sound and free-draining, such as sand, gravel or crushed stone with less than 10% passing the 200 sieve. Maximum diameter shall be 1-1/2 inches.

PART 3 EXECUTION

3.1 STRIPPING

- A. Strip vegetation, topsoil, roots, and other unsuitable material to a depth determined by the Structural Testing/Inspection Agency but not less than one foot, nor less than 10 feet outside the perimeter of the structure.
- B. Stockpile sufficient amounts of topsoil as required to cover areas to be landscaped with a minimum of six inches of material.

3.2 EXCAVATION

- A. Excavation shall be considered unclassified. Excavations shall comply with U.S. Department of Labor, Occupation Safety and Health Administration (OSHA) regulations.
- B. Perform excavation to the depths and limits on the Drawings and as specified herein.

- C. Do not excavate to full depth when there is probability of frost forming or ground freezing in excavation before concrete is placed.
- D. Ground water may be encountered during the foundation excavation. Provide a system for controlling the ground water to a level at least three feet below the lowest point of the excavation.
- E. Keep excavations dry by sloping ground away from holes and trenches.

3.3 PLACEMENT OF BACKFILL

- A. Backfill behind wall shall be placed in layers of six inches.
- B. Compact backfill behind walls to 95 percent of the maximum dry density as measured by Standard Proctor, ASTM D698, with water content within $\pm 3\%$ percent of the optimum moisture content.

3.4 PLACEMENT OF GRANULAR SUBBASE

- A. Do not place granular subbase on subgrade that contains frost, mud or is frozen.
- B. Compact granular subbase to 95 percent of the maximum dry density as measured by Standard Proctor, ASTM D698, with the water content within $\pm 3\%$ percent of the optimum moisture content.

3.5 CLEAN UP

- A. Remove excess excavated materials from job site and upon completion leave site in clean condition.

END OF SECTION

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DIVISION 32
EXTERIOR IMPROVEMENTS

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**SECTION 320000
CLEANING EIFS****PART 1 PART I - GENERAL****1.1 REFERENCE STANDARDS**

- A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- B. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.

1.2 DESCRIPTION AND SCOPE

- A. Requirements contained within Division I (General Requirements) are applicable to the work required of this section. Provide labor, materials, equipment and supervision necessary to complete the cleaning of the exterior wall and finish systems including:
 - 1. EIFS inspection and preparation
 - 2. Protection of damaged wall areas
 - 3. Protection of adjacent materials sensitive to cleaning
 - 4. Protection of plants and sensitive vegetation
 - 5. Use of safety equipment
 - 6. Handling and mixing of cleaning chemicals
 - 7. Operation of application equipment
- B. Related Sections
 - 1. Section 011000 Summary of Work
 - 2. Section 013300 Submittal Products
 - 3. Section 072419 Water-Drainage Exterior Insulation & Finish System (EIFS)
 - 4. Section 076200 Sheet Metal Flashing and Trim
- C. Referenced Documents: Standards
 - 1. ASTM D4610 Standard Guide for Determining the Presence of and Removing
 - 2. Microbial Growth on paint and Related Coatings
 - 3. ASTM F923 Guide for High visibility Materials to Improve Individual Safety
 - 4. ASTM E1542 Terminology Relating to Occupational Health and Safety
 - 5. ASTM D2020 Standard Test Method for Sampling and Analysis of Chlorine Containing Bleaches
 - 6. ASTM D460 Standard Method for Sampling and Analysis of Soap Products
 - 7. ASTM D3274 Test Method for Evaluating the Degree of Surface Disfigurement of Paint Films by Microbiological Growth or Soil and Dirt accumulation
 - 8. ASTM C920 Joint Sealants
 - 9. ASTM C1193 Use of Joint Sealants
- D. Terms and Definitions
 - 1. Exterior Insulated and Finish System (EIFS) EIFS is a non-bearing exterior cladding consisting of a layer of rigid insulation board and outer lamina. The lamina consists of a fiberglass mesh reinforced base coat layer and an outer layer of synthetic stucco finish.
 - 2. Bleach – An alkaline aqueous solution of a known quantity of sodium hypochlorite.
 - 3. Borax - A white powder consisting of Sodium Metaborate.
 - 4. Soap -A chemical designed to lower the surface tension of water and promote an oil-in-water emulsion system.
 - 5. Microbiological Growth – the presence of algae, fungus, bacterial or their related byproducts including spores or micro toxins.
 - 6. Dirt pickup – the accumulation of soil, dirt and pollutants on a surface.
 - 7. Sealant -A permanently flexible self-sticking compound that is used to seal seams in the system.

1.3 DESIGN LIMITATIONS

- A. All procedures shall conform to job document recommendations and shall be consistent with the project requirements.

- B. EIFS
 - 1. The optimum equipment necessary to access all wall areas to be treated shall be utilized.
 - 2. All areas to be masked and protected will be determined.
 - 3. All damaged areas including sealant will be protected and inspected
- C. Safety
 - 1. Proper safety equipment shall be utilized by all laborers.
 - 2. Areas to be cordoned off will be determined.
 - 3. Wind velocity will be monitored.
- D. Inspection
 - 1. Coating deterioration due to microbiological activity or dirt contamination assessment IAW ASTM D3274 will be made during cleaning by the EIFS Consultant.
 - 2. Photographic and written record of the wall surface condition will be made during the cleaning process by the EIFS Consultant.
- E. Joints
 - 1. Contractor shall advise the EIFS Consultant of any failed sealant joints.
 - 2. Failed joints will be protected by masking during the cleaning process unless repaired under separate contract prior to cleaning.

1.4 QUALITY ASSURANCES

- A. The contractor shall have a minimum of one year's experience in the wall construction and cleaning trades, demonstrate the ability to clean the wall based on projects of similar size and complexity, and meet the approval of the EIFS Consultant.
- B. The contractor shall provide the equipment, manpower, materials and supervision necessary to clean the wall system in compliance with the project specifications. No labor subcontracts will be permitted.

1.5 SUBMITTALS

- A. The submittal consisting of this bid specification and supporting contractor documentation, including certificates of Liability and W/C insurance, will be provided with the bid submittal.

1.6 PRODUCT DELIVERY AND STORAGE

- A. Delivery:
 - 1. Deliver all materials necessary for cleaning in original, unopened containers with legible identification intact.
- B. Storage:
 - 1. Store all materials off the ground, under cover and protected from dampness and sunlight.
 - 2. All liquid products shall be stored at 40 F (4.4 C) or above and protected from freezing. Protect from exposure to direct sunlight during storage and temperatures exceeding 110 F.
 - 3. Keep materials secure from children, pets and the general public.

1.7 JOB CONDITIONS

- A. Install all materials in strict accordance with all safety and weather conditions required by this specification.
- B. Apply cleaning solution when the ambient temperature is 40 F (4.4 C) and rising. Do not apply or rinse solutions on a frozen surface.
- C. Avoid application in high wind (wind speeds in excess of 12 mph). Avoid application in direct sunlight as this will reduce the effective contact time of the cleaning solution.
- D. Protect surrounding areas and sensitive surfaces including metalized glass during application and rinsing of the cleaning solution.
- E. Hot walls may be cooled by rinsing with clear water prior to cleaning application.

1.8 COORDINATION AND SCHEDULING

- A. State date when all work is to be completed.

- B. Protect the tops of walls to prevent water from entering behind the system.
- C. Protect open joints or penetrations from water intrusion.

PART 2 PART 2 - MATERIALS

2.1 MATERIALS

- A. All persons handling the mixing or application of the cleaning solution shall wear the following safety equipment:
 - 1. Full coveralls
 - 2. Rubber gloves
 - 3. Safety goggles
 - 4. Dust, mist, fume mask
 - 5. Hat or other head covering

2.2 CLEANING SOLUTION MATERIALS

- A. Chlorine Bleach. A labeled solution of sodium hypochlorite in water such as Clorox Bleach.
- B. Borax. Sodium metaborate powder available as Borax Laundry Booster or Twenty Mule Team Borax.
- C. Liquid dish cleaning soap. Acceptable brand name soaps are Joy, Ivory or Palmolive.
- D. Water. Cleaning requires a faucet source of clean, potable water.
- E. The EIFS Consultant may test cleaning solution to verify proper mixture.

2.3 MIXING AND PREPARATION OF CLEANING SOLUTION

- A. Cleaning solution will be prepared immediately prior to application. Only fresh cleaning solution shall be used. Cleaning solution that is more than one hour old will be discarded.
- B. Prepare cleaning solution as follows: 1. Start with one gallon of water in a clean plastic pail. 2. Add 1/3 cup of Borax powder and mix until dissolved. 3. Add one ounce of dish washing liquid soap. 4. Add one quart of household chlorine bleach (approximately 5% sodium hypochlorite strength)
- C. The final cleaning solution should be approximately 1.25% strength sodium hypochlorite. When starting with a known strength sodium hypochlorite solution, adjust the mix ratio with water to achieve a final concentration of approximately 1.25% strength sodium hypochlorite.

PART 3 PART 3 - EXECUTION

3.1 EQUIPMENT

- A. Have spray equipment available capable of delivering a low pressure 900 psi spray of cleaning solution and clear water to the wall areas to be treated. Have sufficient manpower available for the use of equipment to access all wall areas. This equipment may include bucket-lift trucks, drop staging, scaffolding, scissors scaffolding, and ladders.

3.2 EIFS

- A. PREPARATION
 - 1. Mask and protect all materials and surfaces that could potentially be sensitive to chlorine bleach solution.
 - 2. Cover or mask any openings, holes or damaged areas to prevent water or cleaning solution from entering the wall cavity.
- B. SURROUNDING AREA
 - 1. Protect plants and sensitive vegetation from over-spray with tarps or polyethylene sheeting.
 - 2. Insure that cars and pedestrians are kept clear of potential over-spray areas. If necessary, rope off these areas.
 - 3. Insure that building windows are closed and that occupants are advised of the cleaning process.
- C. APPLICATION

1. Start at the upper wall areas and work downward.
2. Always use low-pressure spray for either the water spray or the cleaning solution. Spray pressures must never exceed 900 psi.
3. If the wall is warm or if working in the sun in warm weather, wet the wall with clear water.
4. Starting at the top of a wall area, apply cleaning solution to the wall with a low- pressure spray or stream. Use horizontal sweeps to apply the cleaning solution. Keep a six to twelve inch run-down of cleaning solution on the wall surface below the stream. Adjust the spray or stream to avoid excessive misting and bounce- back of the cleaning solution.
5. Treat entire vertical sections of wall area before moving to the next area.
6. Allow the cleaning solution to have twenty to thirty minutes of contact time with the wall surface. Thoroughly rinse the wall surface beginning at the top with a clear water spray.

3.3 RE-APPLICATION

- A. Areas may be re-cleaned one additional time, if necessary, as determined by the EIFS Consultant following the above procedure to achieve a more thorough result. This will be determined by visual inspection after the first cleaning, permitting sufficient time for the wall area to dry.

3.4 JOB SITE CLEANUP

- A. All excess materials, tarps, equipment and masking shall be removed from the job site by the applicator immediately upon completion of contract.
- B. All surrounding areas where materials have been applied shall be left free of debris and foreign substances at the end of each workday. All surrounding areas where materials have been applied shall be left free of debris and foreign substances at the end of each workday. All surrounding areas where materials have been applied shall be left free of debris and foreign substances at the end of each workday. All surrounding areas where materials have been applied shall be left free of debris and foreign substances at the end of each workday.

3.5 INSPECTION

- A. A. The building EIFS Consultant will visit the job and inspect the walls prior to and after cleaning, to determine if additional cleaning is necessary, in the presence of the applicator. Before and after photos will be taken by the EIFS Consultant for documentation purposes.

END OF SECTION

DIVISION 33 - 49

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