

KLAMATH COMMUNITY COLLEGE
CHILDCARE LEARNING CENTER

Project Manual

VOLUME 1: DIV 00 - 12

Bid and Permit Set

August 1, 2025

**SECTION 00 0101
PROJECT TITLE PAGE**

PROJECT INFORMATION

0.01 PROJECT NAME

A. Klamath Community College Childcare Learning Center

DATE OF ISSUE

August 1st, 2025

PROJECT OWNER

Klamath Community College

PROJECT ADDRESS

TBD, Klamath Falls, OR 97603

ARCHITECT

PIVOT Architecture, 44 West Broadway, Suite 300, Eugene, OR 97401

Phone: (541) 342-7291

Principal in Charge: John Stapleton, AIA - jstapleton@pivotarchitecture.com

END OF SECTION

**SECTION 00 0102
PROJECT INFORMATION**

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

- A. Project Name: KCC - Childcare Learning Center, located at: Klamath Community College.
- B. Architect's Project Number: 2331.00.
- C. The Owner, hereinafter referred to as Owner: Klamath Community Community College

1.02 PROJECT DESCRIPTION

- A. Summary Project Description: new early learning center..

1.03 PROJECT CONSULTANTS

- A. The Architect, hereinafter referred to as Architect: PIVOT Architecture.
Address: 44 West Broadway Suite 300.
City, State, Zip: Eugene OR 97401.
Phone: 541-342-7291.
Principal in Charge: John Stapleton, AIA - jstapleton@pivotarchitecture.com
- B. CIVIL ENGINEER
 - 1. ZCS Engineering
900 Klamath Avenue, Klamath Falls, OR 97401
Phone: (541) 884-7421
Principal in Charge: Zach Stokes - zachstokes@zcsea.com
- C. STRUCTURAL ENGINEER
ZCS Engineering
524 Main Street #2, Oregon City, OR 97405
Phone: (503) 659-2205
Principal in Charge: Zach Stokes - zachstokes@zcsea.com
- D. MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEER
ColeBreit Engineers
721 SW Industrial Way, Suite 110, Bend, OR 97702
Phone: (541) 728-3293
Principal in Charge: Rob James - rob.james@colebreit.com
- E. LANDSCAPE ARCHITECT
ZCS Engineering
900 Klamath Avenue, Klamath Falls, OR 97401
Phone: (541) 884-7421
Principal in Charge: Zach Stokes - zachstokes@zcsea.com

1.04 PROCUREMENT TIMETABLE

- A. Construction Documents for Bidding will be available: August 5th, 2025
- B. Mandatory Pre-Bid Briefing and Site Tour: Tuesday, August 19, 2025 at 3:00 pm.
- C. Date of Last Addendum Issued: 5 days prior to due date of bids.
- D. Bids will be publicly opened, immediately following the bid closing time. Refer to the Bid Form for location to submit bids and place of bid opening.

- E. First-Tier Subcontractor Disclosure Submission Due: Within two hours of bid closing time.
- F. Bids May Not Be Withdrawn Until: 60 days after due date.
- G. Anticipated Construction Start: Not later than September 22, 2025.
- H. Anticipated Substantial Completion Date: Not later than August 31, 2025.
- I. Desired Final Completion Date: Not later than October 1, 2026.
- J. Final Completion date is critical due to requirements of Owner's operations.
- K. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.05 PROCUREMENT DOCUMENTS

- A. Availability of Documents: Electronic Copies of complete sets of Contract Documents may be obtained:
 - 1. Oregonbuys web portal
 - 2. If you are a Prime Bidder (General Contractor) and would like to be included in a list of Prime Bidders List for the project, please send an e-mail to John Stapleton with your firm name, address and contact information. Include "KCC - Childcare Learning Center Prime Bidders List" in the Subject Line. This list will be included on the PIVOT Architecture File Transfer web site for downloading by interested parties, and updated weekly through the bid period following the pre-bid meeting.
 - 3. Addenda issued during the bid period will be also posted to the PIVOT Architecture File Transfer web site. Check back there regularly. Bidders are required to acknowledge receipt of all addenda on their Bid Form.
 - 4. Contract Documents may be viewed at area plan centers.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 00 0107
SEALS PAGE**

A. Architecture

Responsible for Divisions 02 – 14 Sections except Food service, or where indicated as prepared by other design professionals of record.



B. ZCS – Structural Engineering

Matthew R. Smith, PE, SE, 70888SE

Responsible for Divisions Sections except where indicated as prepared by other design professionals of record.

03 1000 - Concrete Forming and Accessories

03 2000 - Concrete Reinforcing

03 3000 - Cast-in-Place Concrete

04 2200 - Concrete Unit Masonry

05 1200 - Structural Steel Framing

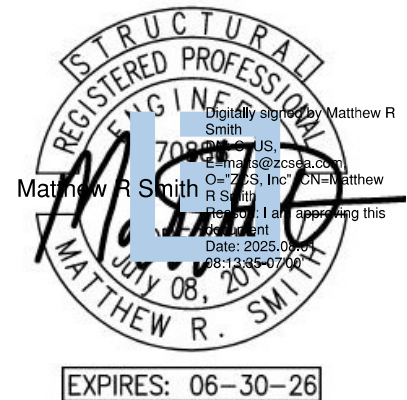
06 17 53 - Shop-Fabricated Wood Trusses

06 1000 - Rough Carpentry

06 1516 - Wood Roof Decking

06 1733 - Wood I-Joists

06 1800 - Glued-Laminated Construction



C. ZCS – Civil Engineering

Zachary A. Stokes, PE, 81129PE

Responsible for Divisions Sections except where indicated as prepared by other design professionals of record.

01 5713 – Temporary Erosion and Sediment Control

31 1000 – Site Clearing

31 2200 – Grading

31 2316.13 – Trenching

31 2323 – Fill

32 1123 – Aggregate Base Courses

32 1216 – Hot Mix Asphalt Paving

32 1313 – Concrete Paving

32 1713 – Parking Bumpers

32 1723.13 – Painted Pavement Markings

32 1726 – Tactile Warning Surfacing

33 0110.58 – Disinfection of Water Utility Piping Systems

33 0561 – Concrete Manholes and Structures

33 1416 – Site Water Distribution Piping

33 3113 – Site Sanitary Sewerage Gravity Piping

33 4100 – Subdrainage

33 4211 – Site Storm Utility Drainage Piping



D. ZCS – Landscape Architecture

Gregory T. Covey, RLA, 295

Responsible for Divisions Sections except where indicated as prepared by other design professionals of record.

32 1816.13 – Playground Protective Surfacing

32 8424 – Irrigation

32 9113 – Soil Preparation

32 9200 – Hydroseeding

32 9300 – Planting



Colebreit

- A. Michael Leavitt, P.E. 91918PE.
 - 1. Responsible for Divisions 220000 Sections except where indicated as prepared by other design professionals of record.
- B. Thomas Kelly, P.E. 101011PE
 - 1. Responsible for Divisions 230000 Sections except where indicated as prepared by other design professionals of record.
- C. John Torrance, P.E. 105827PE
 - 1. Responsible for Divisions 260000, 270000 Sections except where indicated as prepared by other design professionals of record.

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03SECTION 00 1113
ADVERTISEMENT FOR BIDS

Sealed Bids will be received by Nathan Buckley, Director of Facilities, Klamath Community College for the Klamath Community College Childcare Learning Center project until the Deadline for Bid Submission at 2:00 p.m. local time, on Wednesday, September 9th, 2025. A public Bid opening will take place at 2:30 p.m. local time, on Wednesday, September 9, 2025. Bids will be opened in Building 7. For more information contact Nathan Buckley 541-880-2244 buckley@klamathcc.edu.

Sealed Bids to be delivered to Klamath Community College Building 9, Reception Desk 7390 South 6th Street Klamath Falls, OR 97603 during regular working hours 9AM to 4PM weekdays. Late Bids will not be considered.

Construction Documents and Project Manual will be available for download through the OregonBuys eProcurement System.

Bidding Schedule:

8/5/2025: Bids posted for download at OregonBuys web portal.
8/19/2025: Mandatory pre-bid conference
8/25/2025: Addendum 001 issued
9/2/2025: Last day to submit bidder questions
9/4/2025: Final Addendum issued
9/9/2025: Bids Due and Opened

The Project consists of a new 28,000 SF Early Learning Center and associated site improvements. Project is located on the Klamath Community College campus located in Klamath Falls, Oregon.

A mandatory pre-bid conference and walk-through has been scheduled for Tuesday, August 19 at 3:00 pm. The location of the conference will be Klamath Community College Building 7, 7390 South 6th Street Klamath Falls, OR 97603. Statements made by the District's representatives at the conference are not binding upon the District unless confirmed by Written Addendum. Pre-qualification of bidders is not required.

Each Bid must be submitted on the prescribed form and accompanied by a Surety Bond, Cashier's Check, or Certified Check, executed in favor of Klamath Community College, in the amount not less than ten percent (10%) of the total bid, based upon the total bid amount for those items bid upon.

Either with the Bid or within two working hours of the Deadline for Submission of Bids, bidders shall submit, on the form provided, information regarding first-tier subcontractors furnishing labor or labor and materials, as provided in ORS 279C.370. Bids for which disclosure forms are required, but not submitted, will be rejected.

No bid for a construction contract will be received or considered unless the Bidder is registered with the Construction Contractors Board at the time the Bid is made, as required by OAR 137-049-0230. [A license to work with asbestos-containing materials under ORS 468A.720 is not required for this project.]

For every bid \$100,000 or greater, all Contractors and Subcontractors shall have a public works bond, in the amount of \$30,000, filed with the Construction Contractors' Board (CCB),

before starting work on the project, unless exempt. A copy of the Contractors' BOLI Public Works Bond shall be provided with the executed contract documents.

Each Bid shall contain a statement indicating whether the Bidder is a "resident bidder", as defined in ORS 279A.120.

Each Bid shall contain a statement that the "Contractor agrees to be bound by and will comply with the provisions of ORS 279C.800 through 279C.870 regarding payment of Prevailing Wages".

Contractor shall certify nondiscrimination in obtaining required subcontractors, in accordance with ORS 279A.110(4).

Klamath Community College reserves the right to (1) reject any or all Bids not in compliance with all public bidding procedures and requirements, (2) postpone award of the Contract for a period not to exceed sixty (60) days from the date of bid opening, (3) waive informalities in the Bids, (4) select the Bid which appears to be in the best interest of the district, or (5) reject any or all bids.

END OF SECTION 00 1113

DOCUMENT 00 21 13
INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

STANDARD FORM

Instructions to Bidders - AIA Document A701, 2018 Edition, immediately following are part of this Project Manual.

END OF DOCUMENT 00 21 13

DRAFT AIA® Document A701® – 2018

Instructions to Bidders

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

«Klamath Community College ChildCare Center»
«Klamath Community College Campus»
«7390 S 6th St, Klamath Falls, OR 97601 »
Project consists of the construction of a new 28,000 square foot early childhood development learning center and related site improvements.

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

Klamath Community College
«7390 S 6th St, Klamath Falls, OR 97601 »
«Owner Contact: Nathan Buckley, Director of Facilities »
«Buckley@klamathcc.edu »

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

PIVOT Architecture
44 West Broadway, Suite 300
Eugene, OR 97401
Contact: John Stapleton, Principal
jstapleton@pivotarchitecture.com

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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.

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

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

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

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ARTICLE 1 DEFINITIONS

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

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

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

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

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

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

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

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

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

ARTICLE 2 BIDDER'S REPRESENTATIONS

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

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

OregonBuys portal [OregonBuys - /view/login/login.xhtml](#)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper

documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

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

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect by the deadline listed in the Advertisement for Bids document.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

«Questions should be submitted through the OregonBuys website. »

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

§ 3.3 Substitutions

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

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

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

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

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents. *(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)*

«Addenda will be posted to the OregonBuys website. It is the Bidder's responsibility to monitor the website for Addenda and other updates. »

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

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

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

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

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

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

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

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

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

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

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

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

«See Section 00 1113 Invitation for Bids »

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

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall

affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

«Bids will be submitted in person. See Section 00 1113 Invitation for Bids »

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

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

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

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

§ 4.4 Modification or Withdrawal of Bid

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

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

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

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

«See Section 00 1113 Invitation for Bids »

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

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

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

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

§ 6.2 Owner's Financial Capability

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

§ 6.3 Submittals

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

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

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

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

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

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

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
- .4 Drawings. See Project Drawing Set Titled Bidding and Permitting Set, dated 8/4/2025
- .5 Specifications See Project Manual Titled Bidding and Permitting Set, dated 8/4/2025
- .6 Addenda: See OregonBuys website for Addenda.
- .7 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

NONE
- .9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

« »

DOCUMENT 00 22 13
SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

The following Supplementary Instructions to Bidders modify, change from or add to AIA Document A701 Instruction to Bidders, 2018 Edition. Where any Article of the Instructions to Bidders is modified or any paragraph, subparagraph, or clause thereof is modified or deleted by these Supplementary Instructions to Bidders, the unaltered provisions of that Article, paragraph, subparagraph, or clause shall remain in effect.

1.1 ARTICLE 2 BIDDER'S REPRESENTATIONS

A. Add the following subparagraphs to 2.1.3:

2.1.3.1 Bidders are required to attend any mandatory pre-bid conferences or tours as stated in the Advertisement for Bids. Bidders not attending this pre-bid conference and tour shall be disqualified from bidding. Bidders will be required to sign in at the project site prior to the conference or tour.

2.1.3.2 Bidders are encouraged to visit the site(s) to become familiar with existing conditions. The Owner is not responsible and shall not bear financial burden for oversights made by the Bidder for failure to inspect sites prior to submitting a bid.

2.1.3.3 In all cases, persons wishing to examine the area of work must request access by contacting the procurement contact person prior to visiting the work area.

B. Add the following paragraph 2.1.5:

2.1.5 The Bidder certifies by signing the Bid that the Bidder has a drug-testing program in place for its employees that includes, at a minimum, the following:

- .1 A written employee drug-testing program,
- .2 Required drug testing for all new Subject Employees, or alternatively, requiring testing of Subject Employees every six months on a random selection basis,
- .3 Required testing of a Subject Employee when the Contractor has reasonable cause to believe the Subject Employee is under the influence of drugs, and
- .4 Required testing of a Subject Employee when the Subject Employee is involved in: (I) an incident causing an injury requiring treatment by a physician, or (ii) an incident resulting in damage to property or equipment.

A drug-testing program that meets the above requirements will be deemed a "Qualifying Employee Drug-testing Program". For purposes of this rule an employee is a "Subject Employee" only if that employee will be working on the Project job site; and

That if awarded the Public Improvement Contract, the Bidder will execute a contract in which the Contractor shall represent and warrant to the College that the Qualifying Employee Drug-testing Program is in place at the time of contract execution and will continue in full force and effect for the duration of the Public Improvement Contract; and that the Contract will condition the Agency's performance obligation upon the Contractor's compliance with this representation and warranty; and

That the Public Improvement Contract shall contain Contractor's covenant requiring each subcontractor providing labor for the Project to:

- .1 Demonstrate to the Contractor that it has a Qualifying Employee Drug-testing Program for the subcontractor's Subject Employees, and represent and warrant to the Contractor that the Qualifying Employee Drug-testing Program is in place at the time of subcontract execution and will continue in full force and effect for the duration of the subcontract; or
- .2 Require the subcontractor's Subject Employees to participate in the Contractor's Qualifying Employee Drug-testing Program for the duration of the subcontract.

1.2 ARTICLE 3 BIDDING DOCUMENTS

A. 3.3 SUBSTITUTIONS

1. Add the following:

3.3.2.1 All requests for approval must be submitted on the OregonBuys website on "Substitution Request Form". Requests received by Architect less than ten (10) days prior to bid will not be considered.

B. 3.4 ADDENDA

1. Delete paragraph 3.4.1 and substitute the following:

3.4.1 Addenda will be posted on the OregonBuys website.

1.3 ARTICLE 4 BIDDING PROCEDURES

A. 4.1 PREPARATION OF BIDS

1. Add the following Paragraphs:

4.1.8 Bidders shall certify to non-collusion practices on the form included as part of the Bid Form, to be submitted with the Bid Form.

.1 A Non-Collusion Affidavit is required for any contract awarded pursuant to the bid. According to the Oregon Public Contracts and Purchasing Laws, a public contracting agency may reject any or all bids upon a finding of the agency that it is in the public interest to do so (ORS 279C.395). This agency finds that it is in the public interest to require the completion of this affidavit by potential contractors.

.2 The Non-Collusion Affidavit must be executed by the member, officer or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.

.3 Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation approval or submission of the bid.

.4 In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an Affidavit must be submitted separately on behalf of each party.

.5 The term "complementary bid" as used in the Affidavit has the meaning commonly associated with the term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.

.6 Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

4.1.9 Bidders shall certify to non-discrimination in employment practices on the form, included as part of the Bid Form, to be submitted with the Bid Form. By submitting its bid, the Bidder certifies conformance to the applicable federal acts, executive orders, and Oregon statutes and regulations concerning affirmative action toward equal employment opportunities. All information and reports required by the federal or Oregon state governments having responsibility for the enforcement of such laws shall be supplied to the Owner in compliance with such acts, regulation, and orders.

.1 Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

4.1.10 Bidder shall indicate, on the Bid Form where provided, the bidder's status as a "resident" or "non-resident" in accordance with ORS 279C.365 and ORS 279A.120.

4.1.11 First-Tier Subcontractor Disclosure:

- .1 Within two working hours after the date and time of the deadline when the bids are due, a Bidder shall submit to the College a disclosure of the first-tier subcontractors that will be furnishing labor or will be furnishing labor and materials in connection with the public improvement; and will have a contract value that is equal to or greater than 5% of the project bid or \$15,000, whichever is greater, or \$350,000, regardless of the percentage of the total project bid.
- .2 The disclosure of first-tier subcontractors shall include the name of each subcontractor, the category of work that the subcontractor would be performing, and the dollar value of each subcontract.
- .3 The first-tier subcontractor disclosure applies only to public improvements with a contract value of more than \$100,000.
- .4 The College will consider the bid of any contractor that does not submit a required subcontractor disclosure to the College to be a non-responsive bid. A non-responsive Bid will not be considered for Award.
- .5 Contractor shall certify that all subcontractors performing Work are registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under the Contract.

B. 4.2 BID SECURITY

1. Delete paragraphs 4.2.2 and 4.2.3 and substitute the following:

4.2.2 Each Bid shall be accompanied by a surety bond, cashiers check, or certified check, executed in favor of Klamath Community College, in the amount not less than ten percent (10%) of the total bid, based upon the total bid amount for those items bid upon. Should the Bidder refuse to enter into such Contract or fail to furnish Performance and Labor and Materials Payment Bonds and Certificates of Insurance as required by the Supplementary Conditions within ten (10) working days after contract forms are provided to the Bidder, the amount of the Bid Security may be forfeited to the Owner as liquidated damages, not as a penalty.

- .1 The Surety Bond shall be written by a Bonding Company authorized and licensed by the Oregon Insurance Commissioner. The bonding company must be listed on the most current US Government Treasury List, Department Circular 570, or approved PRIOR TO BID SUBMISSION by Klamath Community College. The Bond shall be on an AIA Document A310, most current edition. The Attorney-in-Fact who executes the Bond on behalf of the Surety shall affix to the Bond, a certified copy of a power of attorney.
- .2 The Owner will have the right to retain the Bid Security of Bidders until either; a) the Contract has been executed and Bonds have been furnished, or b) the specified time has elapsed so that Bids may be withdrawn, or c) all Bids have been rejected.

C. 4.4 MODIFICATION OR WITHDRAWAL OF BID

1. Delete paragraph 4.4.1 and substitute the following:

4.4.1 A Bid may not be withdrawn or canceled by the Bidder following the time and date designated for the receipt of bids to the expiration of a 60 day period. The Bid for that sixty days is irrevocable and each Bidder so agrees in submitting a Bid.

1.4 ARTICLE 6 POST-BID INFORMATION

- A. Delete Paragraph 6.1.

- B. Modify paragraph 6.3.1 as follows:

In the first sentence delete the phrase "as soon as practicable" and add "within 48 hours."

- C. Add the following:

6.3.1.4 Where asbestos abatement is required, Contractor or appropriate subcontractor shall be licensed by the Department of Environmental Quality to perform "asbestos abatement work", per OAR 340-248-0120, Adopted 1/25/90, and meet requirements of AHERA as specified in the Federal Register, 40 CFR part 763. Bidder shall submit evidence of licensing to Owner.

1.5 ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

A. 7.1 BOND REQUIREMENTS

1. Delete paragraphs 7.1.1, 7.1.2 and 7.1.3 and add the following:

7.1.1 Unless otherwise stated in the solicitation document, prior to execution of the Agreement, the successful Bidder shall furnish a separate Performance Bond and a Labor Bond and Materials Payment Bond that in all respects conform to the requirements of ORS 279C.380 covering faithful performance of the Contract, and the payment of all obligations arising thereunder, each in an amount equal to one hundred percent (100%) of the Contract sum. The duration of the performance bond shall match the length of the project warranty.

7.1.2 Bonds shall be submitted on AIA Document A312, latest edition.

7.1.3 The surety issuing such bonds shall be duly authorized and licensed to issue bonds in the State of Oregon. The bonds shall be executed by an attorney-in-fact, principal or other authorized representative for the surety company, showing the Oregon agent for service, and bears the seal of the surety company. Where the bond is executed by a person outside the state of Oregon, his authority to execute bonds shall be shown. The Bonds shall be fully executed, payable to the Owner.

7.1.4 The cost of furnishing such bonds shall be included in the Bid.

B. BOLI Public Works Bond:

1. Add the following:

Pursuant to ORS 279C.836, for any contract awarded where the contract price is \$100,000.00 or greater, the Contractor and every subcontractor shall have a Public Works bond filed with the Construction Contractors Board before starting work on the project. This bond is in addition to performance bond and payment bond requirements. A copy of the Contractor's BOLI Public Works Bond shall be provided with the executed contract.

1.2 TIME OF DELIVERY AND FORM OF BONDS

A. Delete paragraph 7.2.1 and substitute the following:

7.2.1 The successful Bidder will be provided with contract forms through the Architect. These forms shall be executed and delivered to the Owner, along with Performance Bond and Labor and Material Payment Bond, within ten (10) days after receiving forms.

B. Add the following article:

ARTICLE 9 MISCELLANEOUS PROVISIONS

9.1 ADMINISTRATIVE RULES

All bidders are required to comply with the provisions of Oregon Revised Statutes. Attention is directed to ORS 244, Government Ethics; ORS 279A and 279C, Public Contracting Code; Oregon Administrative Rules, Chapter 137, Divisions 46, 48 and 49; and OSD Board Policy DJC.

9.2 PROTEST OF BID

Protests of bid specifications or contract terms shall be presented to the Owner in writing five (5) calendar days prior to bid opening. Such protest or request for change shall include the reason for protest or request, and any proposed changes to specifications or terms. No protest against award because of the content of bid specifications or contract terms shall be considered after the deadline established for submitting such protest.

9.3 PROTEST OF AWARD

Any actual bidder or proposer who is adversely affected by the Owner's notice of award of the contract to another bidder or proposer on the same solicitation shall have seventy two (72) hours from the notice of award to submit to the Owner, a written protest of the notice of award. In order to be an adversely affected or aggrieved bidder or proposer with a right to submit a written protest, a bidder or proposer must itself claim to be eligible for award of the contract as the lowest responsible bidder or best proposer and must be next in line for award.

9.4 FINAL AWARD

The written notice of award of the contract shall constitute a final decision of the Owner to award the contract if no written protest of the notice of award is filed with the Owner within the designated time.

END OF DOCUMENT 00 22 13

DOCUMENT 00 41 13
BID FORM

BID FOR: Klamath Community College
Childcare Learning Center

CIP Number

Submitted to:

Bid Deadline: 2:00PM , 9/9/2025

Nathan Buckley
Klamath Community College
7390 South 6th Street
Klamath Falls,
Oregon 97603

Submitted by:

(Company Name)

BASE BID

The undersigned proposes to furnish all material, equipment, and labor required for the complete project, and to perform all work in strict accordance with the Contract Documents for the lump sum prices indicated below with completion occurring on or prior to the dates indicated:

BASE BID

Bid: _____ \$ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Base Bid work on or before the dates specified in Section 01 11 00.

ALTERNATE BIDS

The Undersigned proposes to [ADD TO] [DEDUCT FROM] the Base Bid indicated above the items of work relating to the following Alternates as described in the Project Manual, Section 01 23 00.

NO ALTERNATES LISTED

Bid: _____ \$ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all Alternate No. 1 work on or before dates specified in Section 01 11 00.

It is understood that the Base Bid may be adjusted for any alternates in determining the amount of the Contract. Any or all of such Alternates may be accepted or reinstated by the Owner at any time within 60 days from the date of the Contract Award by the Owner, at the respective amounts named herein.

BID SECURITY

Accompanying herewith is the electronic copy of Bid Security, which is not less than ten percent (10%) of the total amount of the Base Bid plus additive alternates.

STIPULATIONS

The undersigned acknowledges the liquidated damages provision included in the A101-2017 Section 4.5

The undersigned agrees, if awarded the contract, to comply with the provisions of Oregon Revised Statutes 279C.800 through 279C.870 pertaining to the payment of prevailing rates of wage.

The undersigned agrees if awarded the contract to comply with Oregon Revised Statutes 326.603 giving the Owner authority to obtain fingerprints and criminal records check of Contractors, their employees, and subcontractors providing labor for the Project.

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) working days after receiving contract forms, a signed Agreement and a satisfactory Performance Bond and Payment Bond each in an amount equal to 100 percent (100%) of the Contract Sum.

For every Agreement of \$100,000 or greater in value, all Contractors and Subcontractors shall have a public works bond in the amount of \$30,000, filed with the Construction Contractors' Board (CCB), in compliance with ORS 279C.836, before starting work on the project unless exempt. Contractor agrees to provide a copy of the Contractor's BOLI Public Works bond with the signed Agreement as Specified in the Supplementary Conditions.

The undersigned agrees that the Bid Security accompanying this proposal is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above named agreement and bonds; and that if the undersigned defaults in executing that agreement within ten (10) days after forms are provided or providing the bonds, then the Bid Security shall become the property of the Owner; but if this proposal is not accepted within sixty (60) days of the time set for the opening of bids, or if the undersigned executes and delivers said agreement and bonds, the Bid Security shall be returned.

By submitting this Bid, the Bidder certifies that the Bidder:

- a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities;
- b) has a satisfactory record of past performance;
- c) has a satisfactory record of integrity, and is not disqualified under ORS 279C.440;
- d) is qualified legally to contract with the Owner; and
- e) will promptly supply all necessary information in connection with any inquiry the Owner may make concerning the responsibility of the Bidder.

Prior to award of a Contract, the Bidder shall submit appropriate documentation to allow the Owner to determine whether or not the Bidder is "responsible" according to the above criteria.

The contractor agrees with the provisions of Oregon Revised Statutes 279C.505, which requires that the contractor shall demonstrate it has established a drug-testing program for employees and will require each subcontractor providing labor for the Project to do the same.

The undersigned has received addenda numbers _____ to _____ inclusive and has included their provisions in the above Bid amounts.

The undersigned has visited the site to become familiar with conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

The undersigned certifies that the Bidder is a _____ Bidder under ORS. ("Resident" or "Non-resident", to be filled in by Bidder)

Names of Firm: _____

Street Address: _____
(City) (State) (Zip)

Telephone Number: _____ FAX Number: _____

Email Address: _____

Signed By: _____ Printed Name: _____
(Signature of Authorized Official. If bid is from a partnership, one of the partners must sign bid).

Date Signed: _____

Official Capacity: _____

If corporation, attest: _____ Date: _____
(Secretary of Corporation)

SEAL (If Corporate)

____ Corporation
____ Partnership
____ Individual

Enclosed: Bid Security

NON-DISCRIMINATION REQUIREMENT

Contractor certifies that the Contractor has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The Contractor agrees not to discriminate against any client, employee, or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age, unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

FIRM NAME: _____

ADDRESS: _____

TELEPHONE: _____

BY: _____
(Company or Firm Officer)

BY: _____
(Type or Print Name)

NON-COLLUSION AFFIDAVIT

STATE OF _____)

County of _____)

I state that I am _____ of _____
(Title) (Name of Firm)

and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

(1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder, except as disclosed on the attached appendix.

(2) That neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.

(4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or noncompetitive bid.

(5) _____, its affiliates, subsidiaries, officers, directors and
(Name of my Firm)

employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as described on the attached appendix.

I state that _____ understands and acknowledges that the above representations
(Name of my Firm)

are material and important, and will be relied on by Oakridge School District in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from Oakridge School District of the true facts relating to the submission of bids for this contract.

(Authorized Signature)

Sworn to and subscribed before me this _____ day of _____, 20

(Notary Public for Oregon)

My Commission Expires: _____

END OF BID FORM

DOCUMENT 00 45 22
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

PROJECT: Klamath Community College Childcare Learning Center

CIP NUMBER:

TO: Nathan Buckley
Klamath Community College
7390 South 6th Street
Klamath Falls,
Oregon 97603

BID SUBMISSION DEADLINE: Date: 9/09/2025

Time: 2:00PM

SUBMITTAL REQUIREMENTS

Subcontractor disclosure is required on all public improvement contracts greater than \$100,000.

This form must be submitted in person within two working hours after the advertised bid closing time.

List below the name of each subcontractor that will be furnishing labor or labor and materials, and that is required to be disclosed, the category of work that the subcontractor will be performing, and the dollar value of the subcontract. Enter "NONE" if there are no subcontractors that need to be disclosed. (ATTACH ADDITIONAL SHEETS IF NEEDED.)

SUBCONTRACTOR	DOLLAR VALUE	CATEGORY OF WORK
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The above listed first- tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

- a) 5% of the total Contract Price, but at least \$15,000. [If the Dollar Value is less than \$15,000 do not list the subcontractor above.]
- b) \$350,000 regardless of the percentage of the total Contract Price

Failure to submit this form by the disclosure deadline will result in a non-responsive bid. A non-responsive bid will not be considered for award.

Form submitted by (Bidder Name): _____

Contact Name: _____ **Phone:** _____

Signature: _____

END OF DOCUMENT 00 45 22

DOCUMENT 00 52 13
FORM OF AGREEMENT

PART 1 GENERAL

STANDARD FORM

The form of Agreement will be executed on AIA Form A101, Standard Form of Agreement Between Owner and Contractor, 2017 edition, which is included by reference.

END OF DOCUMENT 00 52 13

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 « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »
« »

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

«Klamath Community College Child Care Center»
«Klamath Falls»
« »

The Architect:
(Name, legal status, address and other information)

« »
« »
« »
« »

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.

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TABLE OF ARTICLES

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2	THE WORK OF THIS CONTRACT
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9	ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, 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.

ARTICLE 2 THE WORK OF THIS CONTRACT

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.

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: « »

§ 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.

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 « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

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

Item	Price

§ 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

§ 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)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« »

§ 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, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » 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 « » (« ») 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.

§ 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.)

<< >>

§ 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 Interest

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.)

<< >> % << >>

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

<< >>

<< >>

<< >>

<< >>

§ 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 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

<< >>

§ 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)

<< >>

<< >>

<< >>

<< >>

<< >>

<< >>

§ 8.3 The Contractor’s representative:

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

<< >>

<< >>

<< >>

<< >>

<< >>

<< >>

§ 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 a building information modeling exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with a building information modeling exhibit, 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:

« »

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 Building information modeling exhibit, dated as indicated below:
(Insert the date of the building information modeling exhibit incorporated into this Agreement.)

« »

- .5 Drawings

Number	Title	Date

- .6 Specifications

Section	Title	Date	Pages

- .7 Addenda, if any:

Number	Date	Pages

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.

OWNER (Signature)

<< >>< >>

(Printed name and title)

CONTRACTOR (Signature)

<< >>< >>

(Printed name and title)

DOCUMENT 00 72 13

GENERAL CONDITIONS

PART 1 GENERAL

STANDARD FORM

General Conditions of the Contract for Construction AIA Document A201, 2007 edition, immediately following, are part of these specifications.

The Contractor and all Subcontractors shall read and be governed by them.

CONFLICTS

In the case of conflicts between the General Conditions and these Specifications, the Specifications govern.

END OF DOCUMENT 00 72 13

DRAFT AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

«Klamath Community College Child Care Center»
«Klamath Falls»

THE OWNER:

(Name, legal status and address)

« »« »
« »

THE ARCHITECT:

(Name, legal status and address)

« »« »
« »

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For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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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. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 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.

§ 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.

§ 1.1.8 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.

§ 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.

§ 1.3 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.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon written protocols governing the transmission and use of, and reliance on, Instruments of Service or any other information or documentation in digital form.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to written protocols governing the use of, and reliance on, the information contained in the model shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

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 Following 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 only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, 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 in the Contract Documents.

§ 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 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 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 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 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 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 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.

§ 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.

§ 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.

§ 3.5 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.

§ 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.

§ 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.

§ 3.11 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.

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.

§ 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 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 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.

§ 5.3 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

§ 6.1.1 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 with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 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 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 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.

§ 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.

§ 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.

§ 7.3 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 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 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.

§ 8.3.2 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.

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.

§ 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.

§ 9.3.3 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.

§ 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 is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 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.

§ 9.8.3 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.

§ 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.

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.

§ 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.

§ 11.2 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

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§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.

§ 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 the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 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. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 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
- 4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 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.

§ 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
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 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

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 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 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 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 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 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

DOCUMENT 00 73 43
PREVAILING WAGE RATES

PART 1 GENERAL

The Prevailing Wage Rates dated July 5, 2025, including any subsequent corrections or amendments issued by the Oregon Bureau of Labor and Industries, are included as a portion of the Contract Documents by reference. Copies can be viewed online at www.boli.state.or.us. Click on Prevailing Wages, then PWR Rate Publications, and then Prevailing Wage Rates for Public Works Contracts in Oregon (subject only to state law).

END OF DOCUMENT 00 73 43

SECTION 01 1000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Klamath Community College Childcare Learning Center.
- B. Owner's Name: Klamath Community College.
- C. Architect's Name: PIVOT Architecture.
- D. The Project consists of the construction of construction of a 28,000 SF new childcare learning center building and associated site improvements.

1.02 CONTRACT DESCRIPTION

- A. Project will be procured as a design-bid-build contract. Owner will utilize the AIA document cluster.

1.03 WORK BY OWNER

- A. Items noted OFOI (Owner-Furnished, Owner-Installed) will be supplied and installed by Owner before Substantial Completion. Some items include:
 - 1. Playground equipment
 - 2. IT equipment
- B. Items noted OFCI (Owner-Furnished, Contractor-Installed) will be supplied by the Owner for installation by Contractor before Substantial Completion. Some items include:
 - 1. Carpet will be purchased by the Owner from State purchasing contracts.

1.04 OWNER OCCUPANCY

- A. Owner intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
 - 4. Use of site and premises by the public.
- C. Provide access to and from site as required by law and by Owner:
 - 1. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Utility Outages and Shutdown:
 - 1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, or security and access control systems, without 7 days notice to Owner and authorities having jurisdiction.
 - 2. Prevent accidental disruption of utility services to other facilities.
- E. Except as otherwise stipulated herein, Contractors will have complete use of the Premises within the boundaries of the project as shown on the Drawings for the execution of the Work.
- F. The possession, use, or distribution of illicit drugs and alcohol on the Owner's premises is prohibited. Prescription medications brought to the project site shall be in the original container bearing the name of the drug, the name of the physician, the name of the patient, and the prescribed dosage.
- G. NO SMOKING POLICY: Smoking is not allowed on the construction site and as additionally limited by city or county ordinance.

- H. Tools and building materials shall never be left out when an unsecured work area is vacated.
- I. Ladders and scaffolding will be taken down when an unsecured work area is vacated.
- J. Open holes and other tripping hazards shall be fenced or barricaded when an unsecured work area is vacated.
- K. "Secured Work Area" is defined as an exterior area having a perimeter cyclone fence at least 6 feet in height, with gates which close and lock so that no casual entrance is possible by unauthorized personnel, or an interior area protected by locked doors that reasonably prohibit unauthorized entry.
- L. Operations resulting in vapors, emissions or flying objects shall be conducted in such a way as to prevent exposure to any unprotected parties or property.

1.06 REGULAR BUSINESS HOURS

- A. Regular Business Hours shall be the hours between 7 AM and 6 PM, Monday through Friday.

1.07 PRODUCTS ORDERED IN ADVANCE

- A. Products Ordered in Advance: None

1.08 COORDINATION AND PERMITS

- A. Coordination
 - 1. The Contractor is responsible for overall coordination of the Project.
 - 2. The Drawings and Specifications are arranged for convenience only and do not necessarily determine which trades perform the various portions of the Work.
 - 3. Coordinate sequence of work to accommodate agreed-upon Owner occupancy.
 - 4. Perform all necessary work to receive and/or join the work of all trades.
 - 5. Verify location of existing utilities and protect from damage.
- B. Permits and Fees
 - 1. The Owner will be responsible for filing and paying for building permits and all fees associated with the building permit, system development charges, impact fees, etc. The Contractor will be responsible for picking up all Project permits and will have full responsibility for requirements of and payments for all trade permits (i.e. electrical, plumbing, mechanical).

1.09 DELEGATED DESIGN REQUIREMENTS

- A. Certain components of the Work under this project are Delegated Design. It is the Contractor's responsibility to coordinate and assume or assign to subcontractors the complete responsibilities for the design, calculation, submittals, fabrication, transportation and installation of the Delegated Design portions or components as required. Delegated Design components of the Work are defined as complete operational systems, provided for their intended use.
- B. Submit deferred submittals for delegated design elements to the governing agency for the separate approval of each Delegated Design item as defined in Section 01 3300 - Submittal Procedures.
- C. Owner shall not be responsible to pay for any delays, additional products, additional hours of work or overtime, restocking or rework required due to failure by the Contractor or the subcontractor to coordinate their work with the work of the other trades on the project or to provide the Delegated Design portion or component in a timely manner to meet the schedule of the project.
- D. Delegated Design components include, but are not limited to the following:
 - 1. Steel Joists, Section 05 2100 - Steel Joist Framing.
 - 2. Structural Design of Wood Trusses: As described in Section 06 1753 - Shop-Fabricated Wood Trusses
 - 3. Metal Roof Panels, Section 07 4113 - Metal Roof Panels.
 - 4. Firestopping, Section 07 84 00 - Firestopping.
 - 5. Aluminum Storefront, Section 08 4313 - Aluminum-Framed Storefronts.
 - 6. Glazed Aluminum Curtain Walls, Section - 08 4413.

7. Seismic Anchorage for Suspended Acoustical Ceilings, Section 09 5100 - Acoustical Ceilings.
8. Seismic Anchorage Foodservice Equipment, Section 11 4000 - Foodservice Equipment.
9. Canopy Hood/Fire Protection, Section 11 4000 - Foodservice Equipment.
10. Walk-in Cold Storage Rooms, Section 11 4000 - Foodservice Equipment.
11. Seismic Anchorage Divisions 21, 23, 26, 27 and 28 equipment, hoods, panels and other components of mechanical, plumbing, gas and electrical systems.
12. Fire Suppression, Division 21.
13. Fire Alarm System, Division 28.
14. Additional requirements from specific specification sections in this Project Manual and as shown on the Drawings.

1.10 DUST PROTECTION AND SAFETY BARRIERS

- A. The Contractor shall place and maintain throughout the construction period, High-tack Disposable Floor Mats at all construction egress points leading to finished spaces.
- B. The Contractor shall erect temporary Dust and Safety Barriers around all of the Construction Operations to keep dust and debris within the localized work area, and to protect the owner, staff, and the public from construction activities. Additional requirements may be required if airborne dust is judged by the Owner to be a problem.
- C. The Contractor shall take precautions to protect existing smoke detectors from damage or deterioration from dust caused by work of this contract.
- D. Without disabling these devices, the Contractor shall take precautions to protect existing smoke detectors to prevent dust or non-fire related smoke or fumes from initiating an alarm.

1.11 OVERTIME WORK

- A. The Contractor shall notify the Owner in writing, at least 48 hours in advance of any overtime work, including nights, weekends, and holidays. No overtime work shall be performed without the Owner's prior approval.
- B. The Contractor shall reimburse the Architect and Owner for any expenses incurred by them because of Contractor's overtime work unless the overtime work is due to Owner initiated Change Orders.

1.12 WORK IN PUBLIC RIGHT-OF-WAY

- A. Improvements in the Public Right of Way are to be performed under a Lane County Facility Permit. Drawings prepared under standards for Privately Engineered Public Improvements (PEPI) are included in the Work of this Contract. Follow referenced standards for Public Right of Way work including but not limited to inspections, procedures, testing, standard specifications, standard details, and requirements. The requirements of the County Facility Permit notwithstanding, the Contractor shall be bound by the General and Supplementary General Conditions and to the Agreement between Owner and Contractor.

1.13 PROTECTING EXISTING UTILITIES

- A. Original Building Drawings and Site Survey Drawings indicate approximate location of any known, concealed Utility Lines. Before starting work, Contractor shall determine exact location of any of these Lines that could be damaged by Contract Work.
- B. Contractor shall assume that other unknown Utility Lines do exist, and Contractor shall proceed with caution when working in areas that could conceal unknown Utilities.
- C. If such Utility Lines are encountered, immediately request disposition instructions from Architect.
- D. If Utility Lines are damaged; remove, repair, or replace Lines as directed. Additional compensation and/or extension of time, if any, caused by removing, repairing, or replacing Lines will be determined in accordance with General Conditions.

1.14 PROTECTING EXISTING LANDSCAPING & TREES

- A. Protect existing Trees, not designated for removal, against damage caused by work of this contract.
- B. Provide necessary Fencing and Barricades. Erect prior to Work, and unless otherwise instructed, remove after Work completion. For any work around trees in the Right of Way, obtain approval of local jurisdiction's Urban Forester.
- C. Prohibit Earth stockpiling, Material storage, and Vehicle Parking and Traffic within Drip-line of Trees.
- D. Prohibit dumping of Refuse, Chemicals, and other Materials and puddling or running Water which may injure Plant growth including Root systems.
- E. Prohibit Foot and Vehicle Traffic which may compact Soil over Root Systems.
- F. Prohibit any unnecessary cutting, breaking and skinning of Branches and Roots, and prohibit skinning and bruising of Bark. All tree pruning activities shall be conducted by a certified arborist.
- G. Prohibit all cutting, breaking, and skinning of branches and roots, and skinning or bruising of bark of any trees within the street Right of Way. Consult with a certified arborist and the City of Eugene Urban Forester prior to starting and construction activities that may threaten to damage street trees.
- H. Prohibit Fires, High-heat and Smoke adjacent to Trees.
- I. Repair or replace with plants of equal size, any material damaged by Construction Operations.
- J. Where damaged Trees cannot realistically be repaired or replaced, pay Owner, as Liquidated Damage, value of Trees as determined by Council of Tree & Landscape Appraisers and as distributed by International Society of Arboriculture. Copies can be obtained from Society at Box 71, Urbana, IL 61801. <http://treeandlandscapeappraisal.com/>

1.15 PROTECTING EXISTING SUBGRADE

- A. Contractor shall protect existing Subgrade and Earthwork against damage caused by work provided under this Contract.
- B. Where necessary to accomplish required protection, provide additional Temporary Fill or other approved Cover over Work to be protected.

1.16 PROTECT EXISTING STRUCTURES

- A. Contractor shall protect against damage to existing building parts not scheduled for repair or remodel under this contract.
- B. Where necessary to accomplish required protection, provide additional Temporary barricades, cushioning, or other approved Cover over material to be protected.

1.17 ASBESTOS

- A. The Contractor and Sub-contractors, and their workers shall be extremely careful when working around any asbestos or encapsulated asbestos materials, and take any necessary precautions to avoid disturbing the asbestos or the encapsulation materials. If the asbestos or the encapsulation is disturbed, immediately stop work in the area, and notify the Engineer and the Owners Facility Manager of the location and condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.
- F. Payments for products stored off site.

1.02 RELATED REQUIREMENTS

- A. Section 00 5200 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.
- B. Section 00 7200 - General Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 00 7343 - Prevailing Wage Rates
- D. Section 01 7800 - Closeout Submittals: Project record documents.

1.03 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in PDF format within 15 days after date of Owner-Contractor Agreement.
 - 1. The purpose of the preliminary draft is to confirm the level of detail required by the Design Team, and the Contractor is to make adjustments as requested. The Architect will not review any Application submitted until changes requested by the Architect to the preliminary draft have been incorporated.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section.
 - 1. Specifically identify amounts for products stored off-site, and the additional supporting documentation.
- F. Revise schedule to list approved Change Orders, with each Application For Payment.
- G. Round off values to nearest dollar.
- H. Sum of values listed shall equal total Contract Sum.
- I. Substantiating Data: When requested by Architect, submit justifying Substantiating Data and Line Item Amounts in question.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Monthly.
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.

- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work. Include individual line items for change orders involving multiple items.
- H. Submit one digital copy in PDF format of each Application for Payment.
- I. Include the following with the application:
 - 1. Construction progress schedule, revised and current as specified in Section 01 3000.
 - 2. Affidavits attesting to off-site stored products.
- J. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- K. Submit Applications for Payment to Architect at times stipulated below.
- L. When Architect finds Application properly completed and correct, Architect will transmit 1 digital copy of Certificate for Payment to Owner for approval of payment, with a copy to Contractor, and one retained for files.

1.05 ALTERNATE CONSTRUCTION PAYMENT MANAGEMENT SYSTEMS:

- A. Nothing contained herein would prohibit the Contractor from proposing the use of a Construction Payment Management System that substantially complies with the requirements of this section. The contractor shall pay all additional fees associated with the Owner and Architect's use of this system.

1.06 PAYMENT FOR PRODUCTS STORED OFF THE PROJECT SITE

- A. When delay or added cost to Owner can be avoided by storing Products off Site, Owner will make payment to Contractor for said Products provided that
- B. Contractor shall:
 - 1. Locate Storage Facilities within 20 miles of the Architect's Office or the Project Site.
 - 2. Make Storage Facilities available for Architect's visual inspection.
 - 3. Segregate and label Stored Products for specified Project.
 - 4. Assume all risk for loss.
 - 5. Assume responsibility for exceeding Product "Shelf-Life".
 - 6. Protect Stored Products and provide applicable Insurance against their damage, discoloration, and theft, listing the Owner and any Mortgagee as Additional Named Insured.
 - 7. Submit itemized Inventory and Schedule of Values for Stored Products together with Certificate of Insurance.
 - 8. Submit payment requests to Owner as part of Contractor's regular Progress Payment Request.
 - 9. Reimburse Owner for damages sustained if Stored Products are not delivered to Jobsite when needed.
 - 10. Submit to Owner, with copy to Architect, a written Waiver of Lien insuring Owner against claims for unpaid Storage Costs.
 - 11. Upon receipt of payment from Owner, prepare and issue to Owner, with a copy for Architect, and any Mortgagee, a Bill of Sale for Stored Products.

1.07 DOWNPAYMENTS

- A. The Owner will not approve or pay for any down payment for materials or services that may be requested by suppliers or subcontractors.

1.08 PREVAILING WAGE PAYMENT CERTIFICATION

- A. Submit Prevailing Wage Payment Certification Forms as required by Section 00 7343.

1.09 APPLICATION PAYMENT SCHEDULE

- A. Regular monthly Applications for Payment submitted by the Contractor will be paid by Owner within 30 Days following Owner's approval of payment of in-order Application for Payment.
 - 1. Until Substantial Completion, the Owner will pay Ninety-Five Percent (95%) of the approved payment request, as defined in General Conditions, for work completed during the previous month, as certified by the Architect.
- B. After execution of Certificate of Substantial Completion, and within 30 days, following Owner's approval of payment of the next in-order Application for Payment, the Owner will pay:
 - 1. Balance due under Contract, excluding a Retainage Amount of at least \$1,000, or double the estimated value of uncompleted and/or unacceptable portions of Work, whichever is the greater amount.
- C. Thirty (30) days after final inspection and acceptance by Owner, and within 30 days following Owner's approval of payment of final in-order Application for Payment, the Owner will pay:
 - 1. Balance due under Contract, provided Work be then fully completed and Contract be then fully performed.

1.10 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- C. For other required changes, Architect will issue a Construction Change Directive document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Architect will issue a Proposal Request document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 calendar days.
- E. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
 - 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
 - 1. Provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.

- c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
- 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- H. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- K. Promptly enter changes in Project Record Documents.

1.11 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 00 2113 - Instructions to Bidders: Restrictions on timing of substitution requests.
- B. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.
- C. Section 01 6023 - Substitution Request Form

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control such as lack of availability or regulatory changes.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. A Substitution Request for specified installer constitutes a representation that the submitter:
 - 1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
 - 1. Note explicitly any non-compliant characteristics.
- D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.
 - a. Substitution Request Information:
 - 1) Indication of whether the substitution is for cause or convenience.
 - 2) Issue date.
 - 3) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).

- 4) Description of Substitution.
- 5) Reason why the specified item cannot be provided.
- 6) Differences between proposed substitution and specified item.
- 7) Description of how proposed substitution affects other parts of work.
- b. Impact of Substitution:
 - 1) Savings to Owner for accepting substitution.
 - 2) Change to Contract Time due to accepting substitution.
- E. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
- B. Submittal Form (before award of contract):
 - 1. Submit Substitution Request Form in Section 01 6023.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit Substitution Request Form in Section 01 6023.
- B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.
 - b. Other construction by Owner.
 - c. Other unanticipated project considerations.
- D. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 - 2. Without a separate written request.
 - 3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
 - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

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

3.06 CLOSEOUT ACTIVITIES

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

- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Submittals for review, information, and project closeout.
- E. Number of copies of submittals.
- F. Requests for Information (RFI) procedures.
- G. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 3216 - Construction Progress Schedule: Form, content, and administration of schedules.
- B. Section 01 6000 - Product Requirements: General product requirements.
- C. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Information (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

1.04 CONSTRUCTION ORGANIZATION & START-UP

- A. Responsible Parties:
 - 1. Immediately following Contract execution, Owner and Contractor shall each identify who, within their respective organizations, will be responsible for Project Coordination.
- B. The Contractor shall establish on-site Lines of Authority and Communications including the following:
 - 1. Schedule attendance at Preconstruction Meeting and schedule and conduct Progress Meetings as specified in herein.
 - 2. Establish procedures for Intra-project Communications including:
 - a. Submittals.
 - b. Reports & Records.
 - c. Recommendations.
 - d. Coordination Drawings.

- e. Schedules.
- f. Resolution of Conflicts.
- 3. Technical Documents Interpretation:
 - a. Consult with Architect to obtain interpretation.
 - b. Assist in resolution of questions or conflicts which may arise.
 - c. Transmit written interpretations to Subcontractors and to other concerned parties.
- 4. Permits & Approvals:
 - a. Verify that Subcontractors have obtained required Permits and Inspections for Work and for Temporary Facilities.
- 5. Control use of Site:
 - a. Supervise Field Engineering and Project Layout.
 - b. Allocate Field Office Space and Work and Storage Areas for use of each Subcontractor.

1.05 COORDINATING SUBCONTRACTORS' WORK

- A. Coordinate the Work of all Subcontractors and make certain that, where the Work of one Trade is dependent upon the Work of another Trade, the Work first installed is properly placed, installed, aligned, and finished as specified or required to properly receive subsequent Materials applied or attached thereto.
- B. Direct Subcontractors to correct defects in Substrates they install when Subcontractors of subsequent Materials have a reasonable and justifiable objection to such surfaces.
- C. Do not force Subcontractors to apply or install Products to improperly placed or improperly finished Substrates that would result in an unsatisfactory or unacceptable finished Product.

1.06 COORDINATING WORK WITH WORK OF OWNER OR OTHER CONTRACTS

- A. Coordinate, and make certain that, where Work of either party is dependent upon the other party, the Work first performed is properly placed, installed, aligned, and finished as required to permit the proper installation of the Work following.
- B. If the Owner's Work in any way interferes with the Contractor's Work, so notify the Owner sufficiently in advance so that the Owner has reasonable time to make necessary adjustments.
- C. If the Contractor's Work in any way interferes with Owner's Work, so notify the Owner as soon as possible. If the Contractor's Work must be modified to accommodate the Owner's Work, except as described elsewhere in this Specification, the Contract Sum and/or the Contract Time will, when necessary be adjusted by a Change Order.

1.07 CLOSE-OUT DUTIES

- A. Mechanical & Electrical Equipment start-up:
 - 1. Coordinate check-out of Utilities, Operational Systems, and Equipment.
 - 2. Coordinate site visits of the Owner's Commissioning Agent.
 - 3. Assist in initial start-up and testing.
 - 4. Record starting dates of Systems and Equipment operation.
- B. At completion of Work of each Subcontract, conduct inspection to assure that:
 - 1. Work is acceptable.
 - 2. Specified cleaning has been accomplished, and Temporary Facilities and Debris has been removed from Site.
- C. Substantial Completion:
 - 1. Conduct inspection and prepare list of Work to be completed or corrected.
 - 2. Assist Architect in review of contractor's inspection list and generation of substantial completion punch list.
 - 3. Supervise correction and completion of Work as established in Architect's Observation Reports and substantial completion punch list.
 - 4. Apply for and receive Final Occupancy Permit from Building Department.
 - 5. Complete submittal of Operations and Maintenance Manuals.
 - 6. Complete submittal of Record Drawings.

7. Complete Owner Training.
- D. Final Completion:
 1. Assist Architect in checking that all identified deficiencies have been corrected.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
 4. Contractor's Superintendent.
 5. Major Subcontractors .
 6. Others as needed.
- C. Agenda:
 1. Introductions.
 2. Execution of Owner-Contractor Agreement.
 3. Submission of executed bonds and insurance certificates.
 4. Description of Project
 5. Distribution of Contract Documents.
 6. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 7. Designation of personnel representing the parties to Contract, _____ and Architect.
 8. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - a. ☐ Written Change Order requests required
 - b. ☐ Supporting documentation will be required for all Change Order proposals
 - c. ☐ Describe Contractor's procedure for review and oversight in the preparation of Change Orders
 - d. ☐ Mark-up limitations on Change Orders (See General Conditions Article 7.1.4)
 - e. ☐ Processing time required
 - f. ☐ Applications for Payment
 - 1) ☐ Use AIA documents G702 and G703 latest edition
 - 2) ☐ Wage certifications to be attached or submitted directly to Owner
 9. Scheduling, start date and date of substantial completion.
 10. Building permit status.
 11. Prevailing wage requirements.
 12. Public Agency submittal of Responsible Bidder Determination Form to Construction Contractor's Board (ORS 279C.375).
 13. Communications.
 14. Role of Owner's Project Manager.
 15. Role of Owner's Project Representative
 16. Employee Security Screening and Identification Badging.
 17. Submittals required per Contract Documents.
 18. MSDS Information
 19. Erosion control procedures
 20. Waste management procedures
 21. Environmental quality requirements
 22. Hazardous materials
 23. Construction activities, working hours, use of site and building.
 24. Staging and parking areas.
 25. Temporary facilities and utilities.

26. Request for information and clarification of design
 27. Correction of Defects.
 28. Weekly on-site progress meetings.
 29. Safety and Emergency Procedures.
 30. Verify that Contractor's Mandatory Drug Testing Program is in place.
 31. Daily Clean-up
 32. Project Closeout, substantial completion, final completion.
 33. Record Drawings and Operations and Maintenance Manuals
 34. Tour of Project by Owner's staff and guests (if applicable)
 35. Additional Comments
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, other participants, and those affected by decisions made.
 - E. Architect will record minutes and distribute copies within [five] days after meeting to participants, with digital copies to Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
 1. Contractor.
 2. Owner.
 3. Architect.
 4. Contractor's superintendent.
 5. Major subcontractors.
- D. Agenda:
 1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to the work.
- E. Record minutes and distribute copies within five days after meeting to participants, with digital copies to Architect, Owner, other participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 3216

3.04 REQUESTS FOR INFORMATION (RFI)

- A. Definition: A request seeking one of the following:
 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 2. A resolution to an issue which has arisen due to field conditions and affects design intent.

- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 - 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 - 2. Prepare in a format and with content acceptable to Owner.
 - 3. Combine RFI and its attachments into a single PDF Format electronic file.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
 - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 01 6000 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 - 2. Discrete and consecutive RFI number, and descriptive subject/title.
 - 3. Issue date, and requested reply date.
 - 4. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 - 5. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 - 6. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
 - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 - 2. Note dates of when each request is made, and when a response is received.

3. Highlight items requiring priority or expedited response.
 4. Highlight items for which a timely response has not been received to date.
 5. Identify and include improper or frivolous RFIs.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
 4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.05 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
1. Submit at the same time as the preliminary schedule specified in Section - 01 3216 - Construction Progress Schedule.
 2. Coordinate with Contractor's construction schedule and schedule of values.
 3. Format schedule to allow tracking of status of submittals throughout duration of construction.
 4. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.06 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
 5. Other information required in individual specification sections.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Product Data:
1. Clearly mark each copy to identify pertinent Products.
 2. Show performance characteristics and capacities.
 3. Show dimensions, field dimensions, and required clearances.
 4. Show wiring and piping diagrams, and controls.
 5. Show standard schematic drawings and diagrams:
 - a. Modify to delete information not applicable to Work.

- b. Supplement standard information to provide information specifically applicable to Work.
 - c. Assure that any photo copied material is clearly legible or provide all original material.
- D. Samples will be reviewed for aesthetic, color, or finish selection.
- E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.07 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other information required in individual specification sections.
 - 8. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other information required in individual specification sections.
 - 6. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.09 NUMBER OF COPIES OF SUBMITTALS

- A. Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. Show full range of color, texture & pattern.
 - 2. Retained samples will not be returned to Contractor unless specifically requested.

3.10 SUBMITTAL PROCEDURES

- A. General Requirements:
 - 1. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
 - 2. Transmit using approved form.
 - a. Use Contractor's form, subject to prior approval by Architect.
 - 3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
 - 4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.

5. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
 6. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
 - a. Send submittals in electronic format via email to Architect.
 - b. Unless otherwise approved by the Architect in advance of receipt of the submittal, all information and any markup of PDF documents shall be produced using appropriate PDF editing software, and not handwritten. PDF documents shall not be scanned original copies, but shall be submitted in their original digital form and remain fully searchable using PDF viewing software in common use.
 7. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 14 calendar days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 calendar days.
 - c. For sequential reviews or deferred submittals requiring approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 21 days.
 8. Notify Architect in writing, at submission time, of any deviations in Submittals from Contract Document requirements. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
 9. Provide space for Contractor and Architect review stamps.
 10. When revised for resubmission, identify all changes made since previous submission.
 11. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
 12. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
 13. Submittals not requested will be recognized, and will be returned "Not Reviewed",
- B. Product Data Procedures:
1. Submit only information required by individual specification sections.
 2. Collect required information into a single submittal.
 3. Submit concurrently with related shop drawing submittal.
 4. Do not submit (Material) Safety Data Sheets for materials or products. Maintain a copy of the MSDS sheets on site.
 5. Clearly mark each copy to identify pertinent Products.
 6. Show performance characteristics and capacities.
 7. Show dimensions, field dimensions, and required clearances.
 8. Show wiring and piping diagrams, and controls.
 9. Show standard schematic drawings and diagrams:
 - a. Modify to delete information not applicable to Work.
 - b. Supplement standard information to provide information specifically applicable to Work.
 - c. Assure that any photo copied material is clearly legible or provide all original material.
- C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 2. Do not reproduce Contract Documents to create shop drawings.
 3. Do not submit generic, non-project-specific information as shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.

2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

E. Perform no Work or Fabrication requiring Submittal until Architect approves Submittal.

3.11 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt, but will take no other action.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
 1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect's and consultants' actions on items submitted for review:
 1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "No Exception Taken", or language with same legal meaning.
 - b. "Make Corrections Noted", or language with same legal meaning.
 - 1) Incorporate review comments. Contractor is not required to resubmit.
 - 2) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated, for Architect's records.
 2. Not Authorizing fabrication, delivery, and installation:
 - a. "Revise and Resubmit".
 - 1) Resubmit revised item, with review notations acknowledged and incorporated.
 - 2) Non-responsive resubmittals may be rejected.
 - b. "Rejected".
 - 1) Submit item complying with requirements of Contract Documents.
- E. Architect's and consultants' actions on items submitted for information:
 1. Items for which no action was taken:
 - a. "Received" - to notify the Contractor that the submittal has been received for record only.

END OF SECTION

SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.
- C. Construction progress schedule, three week look ahead.

1.02 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.
- D. Submit in PDF format to the Architect and Owner.

1.03 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Sheet Size: 11 x 17 inches or 22 x 34 inches.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules for each stage of Work identified in Section 01 1000 - Summary.
- E. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- F. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.
- G. Indicate delivery dates for owner-furnished products.
- H. Provide legend for symbols and abbreviations used.

3.02 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.
- C. Illustrate the project's critical path, with the order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.

3.03 THREE WEEK LOOK AHEAD SCHEDULE

- A. Each week during construction, provide companion schedule to master project schedule to look ahead three weeks. Provide increased detail as requested by the Owner or Architect to clearly show the work planned for the upcoming weeks.
- B. Distribute at the beginning of each weekly project meeting.

3.04 REVIEW AND EVALUATION OF SCHEDULE

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

- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.05 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

3.06 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2019).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2017.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2022.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2021.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
- G. OSSC - Oregon Structural Specialty Code, latest edition.

1.04 DEFINITIONS

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

1.05 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:

1. Steel Joists, Section 05 2100 - Steel Joist Framing.
2. Cold-Formed Metal Framing, Section 05 4000 - Cold-Formed Metal Framing.
3. Structural Design of Metal-Web Wood Joists: As described in Section 06 1736 - Metal-Web Wood Joists.
4. Structural Design of Wood Trusses: As described in Section 06 1753 - Shop-Fabricated Wood Trusses
5. Metal Roof Panels, Section 07 4113 - Metal Roof Panels.
6. Firestopping, Section 07 84 00 - Firestopping.
7. Aluminum Storefront, Section 08 4313 - Aluminum-Framed Storefronts.
8. Glazed Aluminum Curtain Walls, Section - 08 4413.
9. Seismic Anchorage for Suspended Acoustical Ceilings, Section 09 5100 - Acoustical Ceilings.
10. Seismic Anchorage Foodservice Equipment, Section 11 4000 - Foodservice Equipment.
11. Canopy Hood/Fire Protection, Section 11 4000 - Foodservice Equipment.
12. Walk-in Cold Storage Rooms, Section 11 4000 - Foodservice Equipment.
13. Seismic Anchorage Divisions 21, 23, 26, 27 and 28 equipment, hoods, panels and other components of mechanical, plumbing, gas and electrical systems.
14. Fire Suppression, Division 21.
15. Fire Alarm System, Division 28.
16. Additional requirements from specific specification sections in this Project Manual and as shown on the Drawings.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- C. Test Reports: After each test/inspection, promptly submit one digital copy of report to Owner, Architect, Engineer, Authority Having Jurisdiction, and to Contractor.
 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Compliance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's and other interested party information.
 3. Copies of Test Reports should also be provided directly to the Owner, Design Engineer, and the City of Eugene Building Department.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- F. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- G. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.07 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.08 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ and pay for services of an independent testing agency to perform specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.

- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
- D. Notify Architect fifteen (15) working days in advance of dates and times when mockups will be constructed.
- E. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction of the Project.
- F. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- G. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- H. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
 - 1. Make corrections as necessary until Architect's approval is issued.
- I. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- J. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.
- K. Where possible salvage and recycle the demolished mock-up materials.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. See individual specification sections and the current building code for testing and inspection required.
- B. Comply with OSSC Requirements for products and systems used in project.
- C. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
 - 5. Perform additional tests and inspections required by Architect.

6. Submit reports of all tests/inspections specified.
- D. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- E. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- F. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- G. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations.
1. Observer subject to approval of Architect.
 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

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

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dewatering
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers, enclosures, and fencing.
- F. Security requirements.
- G. Vehicular access and parking.
- H. Project identification sign.
- I. Field offices.

1.02 SUBMITTALS

- A. Contractor shall prepare and submit a logistics plan describing how temporary facilities and control will be addressed, obtaining approval from the Owner prior to commencing the Work.

1.03 DEWATERING

- A. Provide temporary means and methods for dewatering all temporary facilities and controls.

1.04 TEMPORARY UTILITIES - SEE SECTION 01 5100

1.05 TELECOMMUNICATIONS SERVICES

- A. Contractor shall arrange for, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Internet Connections: Minimum of one; DSL modem or faster, with wifi service.
 - a. Allow Owner, Architect, Consultants and other members of the project team wifi access to the internet through this connection.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.07 BARRIERS

- A. Provide barriers to protect workers on the site and the public against injury.
- B. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage as a result of construction operations and demolition.
- C. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- D. Provide protection for plants designated to remain. Replace damaged plants.
- E. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- F. Traffic Controls: Provide as required to maintain safe working environment for Owner and Contractor personnel using the site.

1.08 TEMPORARY FIRE PROTECTION

- A. Provide and maintain necessary facilities and equipment to safeguard Project against fire damage.

1.09 FENCING

- A. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.10 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.11 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
 - 1. Maximum flame spread rating of 75 in accordance with ASTM E84.

1.12 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.13 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- G. Existing parking areas located adjacent to project site may be used for construction parking. Coordinate with Facilities Director.
- H. Do not allow vehicle parking on existing sidewalk pavement.
- I. Use designated drop off and delivery areas for short term parking only.
- J. Do not use Owner's Parking Lots for overnight vehicle storage.
- K. Designate one parking space for Owner and Architect use.
- L. Repair and restore existing facilities damaged by use, to original condition.
- M. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes. Comply with state transportation and local public works and other related agency requirements.

1.14 MATERIAL STORAGE SPACE

- A. Maintain within Project Limits in accordance with Architect's and Owner's instructions. Do not block exitways or overload structure.

1.15 PROJECT IDENTIFICATION

- A. A project sign is not required for this project.
- B. No other signs are allowed without Owner permission except those required by law.

1.16 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture and storage space for drawings and all project documents .
- B. Provide space for Project meetings, with table and chairs to accommodate 8 persons.
- C. Provide office within 15 days from Notice to Proceed, maintain, and remove prior to Substantial Completion or as agreed by Owner.

1.17 VISITOR PERSONAL PROTECTION EQUIPMENT

- A. Provide six sets of Personal Protection Equipment (PPE) for use by official visitors to the project site during construction. Visitor PPE shall include as a minimum, hard hat and OSHA approved protective safety glasses. Provide high visibility garments when moving vehicles are in use on the construction site. Store in Field Office and reserve for use by visitors to the project site.
- B. Maintain in good condition through the course of the project and replace equipment that does not meet personal safety requirements.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5100
TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities: Provision of electricity, lighting, heat, ventilation, and water.

1.02 CONSERVATION

- A. It is the Owner's practice to utilize natural resources responsibly. Exercise appropriate energy and water conservation measures at all times.

1.03 TEMPORARY ELECTRICITY

- A. Cost of Labor, Material and Energy: By Contractor.
- B. Provide power service required from utility source.
- C. Provide power outlets for construction operations, with branch wiring and distribution boxes located at each floor. Provide flexible power cords as required.
- D. Provide main service disconnect and over-current protection at convenient location and meter.
- E. Permanent convenience receptacles may be utilized during construction.
- F. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.04 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain LED, compact fluorescent, or high-intensity discharge lighting as suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.
- C. Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.
- D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- E. Maintain lighting and provide routine repairs.
- F. Permanent building lighting may be utilized during construction.

1.05 TEMPORARY HEATING

- A. Cost of of Labor, Material and Energy: By Contractor.
- B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
- C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.06 TEMPORARY COOLING

- A. Provide cooling devices and cooling as needed to maintain specified conditions for construction operations.
- B. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.07 TEMPORARY VENTILATION

- A. Existing ventilation equipment may not be used.

1.08 TEMPORARY WATER SERVICE

- A. Cost of Labor, Materials, and Water Used: By Contractor.

- B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- C. Connect to existing water source.
 - 1. Exercise measures to conserve water.
- D. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5713
TEMPORARY EROSION AND SEDIMENT CONTROL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Concrete for temporary and permanent erosion control structures indicated on drawings.
- B. Section 31 10 00 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.
- C. Section 31 22 00 - Grading: Temporary and permanent grade changes for erosion control.
- D. Section 32 11 23 - Aggregate Base Courses: Temporary and permanent roadways.

1.03 REFERENCE STANDARDS

1.04 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of EPA (NPDES) for erosion and sedimentation control, as specified by the NPDES, for Phases I and II, and in compliance with requirements of Construction General Permit (CGP), whether the project is required by law to comply or not.
- B. Also comply with all more stringent requirements of State of Oregon DEQ Erosion and Sedimentation Control Manual.
- C. Also complete with all more stringent requirements of Rogue Valley Sewer Services (permitting and inspection authority on behalf of Oregon DEQ) Erosion Prevention and Sediment Control Requirements.
- D. Best Management Practices Standard: FHWA FLP-94-005.
- E. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.
- F. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
 - 1. Owner will obtain permits and pay for securities required by authority having jurisdiction.
 - 2. Owner will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.
- G. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- H. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 2 years.
- I. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.

2. Prevent development of ruts due to equipment and vehicular traffic.
 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner
- J. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
1. Prevent windblown soil from leaving the project site.
 2. Prevent tracking of mud onto public roads outside site.
 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- K. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- L. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- M. Open Water: Prevent standing water that could become stagnant.
- N. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.
- C. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.
- D. Maintenance Instructions: Provide instructions covering inspection and maintenance for temporary measures that must remain after Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Mulch: Use one of the following:
 1. Wood waste, chips, or bark.
 2. Erosion control matting or netting.
 3. Polyethylene film, where specifically indicated only.
- B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- C. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:

1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
 2. Permittivity: 0.05 sec^{-1} , minimum, when tested in accordance with ASTM D4491/D4491M.
 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
 4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
 6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533.
 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
 8. Manufacturers:
 - a. BP Amoco, Amoco Fabrics and Fibers: www.geotextile.com
 - b. TenCate: www.tencate.com
 - c. North American Green: www.nagreen.com
 - d. Propex Geosynthetics: www.geotextile.com
- D. Silt Fence Posts: One of the following, minimum 5 feet long:
1. Hardwood, 2 by 2 inches in cross section.
- E. Gravel: See Section 32 11 23 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
 1. Width: As required; 30 feet, minimum.
 2. Length: 50 feet, minimum.
 3. Provide at each construction entrance from public right-of-way.
 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
 1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
 - b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.
 - c. Along the toe of cut slopes and fill slopes.
 - d. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart.
 - e. Across the entrances to culverts that receive runoff from disturbed areas.
 2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet..
 - b. Slope Between 2 and 5 Percent: 75 feet.
 - c. Slope Between 5 and 10 Percent: 50 feet.
 - d. Slope Between 10 and 20 Percent: 25 feet.

- e. Slope Over 20 Percent: 15 feet.
- D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
 - 1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
 - 2. Straw bale row blocking entire inlet face area; anchor into pavement.
- E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.
- F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.
- G. Soil Stockpiles: Protect using one of the following measures:
 - 1. Cover with polyethylene film, secured by placing soil on outer edges.
 - 2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.
- H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
 - 1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.
- I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 - 1. Excavate minimum of 6 inches.
 - 2. Place geotextile fabric full width and length, with minimum 24 inch overlap at joints.
 - 3. Place and compact at least 8 inches of 2 inch diameter drain rock.
- B. Silt Fences:
 - 1. Store and handle fabric in accordance with ASTM D4873.
 - 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
 - 3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
 - 4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
 - 5. Install with top of fabric at nominal height and embedment as specified.
 - 6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
 - 7. Fasten fabric to wood posts using one of the following:
 - a. Four nails per post with 3/4 inch diameter flat or button head, 1 inch long, and 14 gauge, 0.083 inch shank diameter.
 - b. Five staples per post with at least 17 gauge, 0.0453 inch wire, 3/4 inch crown width and 1/2 inch long legs.
 - 8. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.
- C. Temporary Seeding:
 - 1. When hydraulic seeder is used, seedbed preparation is not required.
 - 2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
 - 3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.

4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
5. Incorporate fertilizer into soil before seeding.
6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
 1. Promptly replace fabric that deteriorates unless need for fence has passed.
 2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Clean out temporary sediment control structures weekly and relocate soil on site.
- E. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Engineer.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 01 5713
TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 PERFORMANCE REQUIREMENTS

- A. Comply with all requirements of state and local jurisdictions for erosion and sedimentation control .
- B. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.
- C. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
 - 1. Owner will obtain permits and pay for securities required by authority having jurisdiction.
 - 2. Owner will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.
- D. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- E. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.
- F. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.
 - 2. Prevent development of ruts due to equipment and vehicular traffic.
 - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- G. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
 - 1. Prevent windblown soil from leaving the project site.
 - 2. Prevent tracking of mud onto public roads outside site.
 - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
 - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- H. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.

2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- I. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- J. Open Water: Prevent standing water that could become stagnant.
- K. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.03 WORK INCLUDED BUT SPECIFIED ELSEWHERE

- A. Erosion control products and construction work within the Lane County right-of-way shall conform to ODOT Standard Specifications for Highway Construction (1996) in addition to the requirements herein and those shown on the private improvement drawings.
- B. Erosion control products and construction work within the City of Eugene right-of-way shall conform to the 1990 Standard Specifications for Public Works Construction published by the Oregon Chapter of APWA (Amended in 1996) and City of Eugene Amendment No. 8 in addition to the requirements herein and those shown on the private improvement drawings.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Erosion and Sedimentation Control Plan:
 1. Submit within 2 weeks after Notice to Proceed.
 2. Include:
 - a. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
 - b. Site plan showing grading; new improvements; temporary roads, traffic accesses, and other temporary construction; and proposed preventive measures.
 - c. Where extensive areas of soil will be disturbed, include storm water flow and volume calculations, soil loss predictions, and proposed preventive measures.
 - d. Schedule of temporary preventive measures, in relation to ground disturbing activities.
 - e. Other information required by law.
 - f. Format required by law is acceptable, provided any additional information specified is also included.
 3. Obtain the approval of the Plan by authorities having jurisdiction.
 4. Obtain the approval of the Plan by Owner.
- C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.
- D. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Mulch: Use one of the following:
 1. Straw or hay.
 2. Wood waste, chips, or bark.
 3. Erosion control matting or netting.
 4. Polyethylene film, where specifically indicated only.

- B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- C. Bales: Air dry, rectangular straw bales.
 - 1. Cross Section: 14 by 18 inches, minimum.
 - 2. Bindings: Wire or string, around long dimension.
- D. Bale Stakes: One of the following, minimum 3 feet long:
 - 1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot.
 - 2. Wood, 2 by 2 inches in cross section.
- E. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
 - 1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
 - 2. Permittivity: 0.05 sec^{-1} , minimum, when tested in accordance with ASTM D4491/D4491M.
 - 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
 - 4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
 - 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
 - 6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533/D4533M.
 - 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- F. Silt Fence Posts: One of the following, minimum 5 feet long:
 - 1. Softwood, 4 by 4 inches in cross section.
- G. Gravel: See Section 32 1123 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
 - 1. Width: As required; 20 feet, minimum.
 - 2. Length: 50 feet, minimum.
 - 3. Provide at each construction entrance from public right-of-way and where noted on drawings.
 - 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
 - 1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
 - 2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet..
 - b. Slope Between 2 and 5 Percent: 75 feet.

- c. Slope Between 5 and 10 Percent: 50 feet.
 - d. Slope Between 10 and 20 Percent: 25 feet.
 - e. Slope Over 20 Percent: 15 feet.
- D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
 - 1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
 - 2. Straw bale row blocking entire inlet face area; anchor into pavement.
- E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.
- F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.
- G. Soil Stockpiles: Protect using one of the following measures:
 - 1. Cover with polyethylene film, secured by placing soil on outer edges.
 - 2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.
- H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
 - 1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.
- I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 - 1. Excavate minimum of 6 inches.
 - 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
 - 3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.
- B. Silt Fences:
 - 1. Store and handle fabric in accordance with ASTM D4873/D4873M.
 - 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
 - 3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
 - 4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
 - 5. Install with top of fabric at nominal height and embedment as specified.
 - 6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
 - 7. Fasten fabric to wood posts using one of the following:
 - a. Four nails per post with 3/4 inch diameter flat or button head, 1 inch long, and 14 gauge, 0.083 inch shank diameter.
 - b. Five staples per post with at least 17 gauge, 0.0453 inch wire, 3/4 inch crown width and 1/2 inch long legs.
 - 8. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.
- C. Straw Bale Rows:
 - 1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
 - 2. Install bales so that bindings are not in contact with the ground.
 - 3. Embed bales at least 4 inches in the ground.

4. Anchor bales with at least two stakes per bale, driven at least 18 inches into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
 5. Fill gaps between ends of bales with loose straw wedged tightly.
 6. Place soil excavated for trench against bales on the upslope side of the row, compacted.
- D. Mulching Over Large Areas:
1. Dry Straw and Hay: Apply 2-1/2 tons per acre; anchor using dull disc harrow or emulsified asphalt applied using same spraying machine at 100 gallons of water per ton of mulch.
 2. Wood Waste: Apply 6 to 9 tons per acre.
 3. Erosion Control Matting: Comply with manufacturer's instructions.
- E. Mulching Over Small and Medium Areas:
1. Dry Straw and Hay: Apply 4 to 6 inches depth.
 2. Wood Waste: Apply 2 to 3 inches depth.
 3. Erosion Control Matting: Comply with manufacturer's instructions.
- F. Temporary Seeding:
1. When hydraulic seeder is used, seedbed preparation is not required.
 2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
 3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.
 4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
 5. Incorporate fertilizer into soil before seeding.
 6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
 7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
 8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
1. Promptly replace fabric that deteriorates unless need for fence has passed.
 2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Straw Bale Rows:
1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
 2. Remove silt deposits that exceed one-half of the height of the bales.
 3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- E. Clean out temporary sediment control structures weekly and relocate soil on site.
- F. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 01 5719
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction procedures to promote adequate indoor air quality after construction.
- B. Building flush-out after construction and before occupancy.
- C. Testing indoor air quality after completion of construction.

1.02 PROJECT GOALS

- A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - 1. Cleaning of ductwork is not contemplated under this Contract.
 - 2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
- B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
 - 1. Furnish products meeting the specifications.
 - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Testing and inspection services.
- B. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.04 REFERENCE STANDARDS

- A. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2021.
- B. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; 2017, v1.2.
- C. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; 1990.
- D. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; 1999.
- E. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 2007.

1.05 DEFINITIONS

- A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.
- C. Particulates: Dust, dirt, and other airborne solid matter.
- D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Indoor Air Quality Management Plan: Describe, in detail, measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
 - 1. Submit not less than 60 days before enclosure of building.
 - 2. Identify potential sources of odor and dust.
 - 3. Identify construction activities likely to produce odor or dust.

4. Identify areas of project potentially affected, especially occupied areas.
 5. Evaluate potential problems by severity and describe methods of control.
 6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
 7. Describe cleaning and dust control procedures.
- C. Air Contaminant Test Plan: Identify:
1. Testing agency qualifications.
 2. Locations and scheduling of air sampling.
 3. Test procedures, in detail.
 4. Test instruments and apparatus.
 5. Sampling methods.
- D. Air Contaminant Test Reports: Show:
1. Location where each sample was taken, and time.
 2. Test values for each air sample; average the values of each set of 3.
 3. HVAC operating conditions.
 4. Certification of test equipment calibration.
 5. Other conditions or discrepancies that might have influenced results.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Low VOC Materials: See Section 01 6116.
- B. Low VOC Materials: See individual sections for specific requirements for materials with low VOC content.

PART 3 EXECUTION

3.01 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by absorptive materials by:
1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Begin construction ventilation when building is substantially enclosed.
- C. If extremely dusty or dirty work must be conducted inside the building, shut down HVAC systems for the duration; remove dust and dirt completely before restarting systems.
- D. Use of HVAC equipment and ductwork for ventilation during construction is not permitted:
1. Provide temporary ventilation equivalent to 1.5 air changes per hour, minimum.
 2. Exhaust directly to outside.
 3. Seal HVAC air inlets and outlets immediately after duct installation.
- E. Do not store construction materials or waste in mechanical or electrical rooms.
- F. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
1. Inspect duct intakes, return air grilles, and terminal units for dust.
 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
 3. Clean tops of doors and frames.
 4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
 5. Clean return plenums of air handling units.
 6. Remove intake filters last, after cleaning is complete.
- G. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.

- H. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

3.02 BUILDING FLUSH-OUT

- A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.
- B. Perform building flush-out before occupancy.
- C. Do not start flush-out until:
 - 1. All construction is complete.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
 - 4. New HVAC filtration media have been installed.
- D. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of 14,000 cubic feet per square foot of floor area has been supplied.
 - 1. Obtain Owner's concurrence that construction is complete enough before beginning flush-out.
 - 2. Maintain interior temperature of at least 60 degrees F and interior relative humidity no higher than 60 percent.
 - 3. If additional construction involving materials that produce particulates or any of the specified contaminants is conducted during flush-out, start flush-out over.
 - 4. If interior spaces must be occupied prior to completion of the flush-out, supply a minimum of 25 percent of the total air volume prior to occupancy, and:
 - a. Begin ventilation at least three hours prior to daily occupancy.
 - b. Continue ventilation during all occupied periods.
 - c. Provide minimum outside air volume of 0.30 cfm per square foot or design minimum outside air rate, whichever is greater.
- E. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

3.03 AIR CONTAMINANT TESTING

- A. Contractor's Option: Either full continuous flush-out, or satisfactory air contaminant testing is required, not both.
- B. Perform air contaminant testing before occupancy.
- C. Do not start air contaminant testing until:
 - 1. All construction is complete, including interior finishes.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. New HVAC filtration media have been installed.
- D. Indoor Air Samples: Collect from spaces representative of occupied areas:
 - 1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
 - 2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet; take samples from areas having the least ventilation and those having the greatest presumed source strength.
 - 3. Collect samples from height from 36 inches to 72 inches above floor.
 - 4. Collect samples from same locations on 3 consecutive days during normal business hours; average the results of each set of 3 samples.
 - 5. Exception: Areas with normal very high outside air ventilation rates, such as laboratories, do not need to be tested.
 - 6. When retesting the same building areas, take samples from at least the same locations as in first test.

- E. Outdoor Air Samples: Collect samples at outside air intake of each air handler at the same time as indoor samples are taken.
- F. Analyze air samples and submit report.
- G. Volatile Organic Compounds Limits:
 - 1. Formaldehyde: Not more than 27 parts per billion.
 - 2. PM10 Particulates: Not more than 50 micrograms per cubic meter.
 - 3. Total Volatile Organic Compounds (TVOCs): Not more than 500 micrograms per cubic meter.
 - 4. Chemicals Listed in CAL (CDPH SM) Table 4-1, other than Formaldehyde: Not more than allowable concentrations listed in Table 4-1.
 - 5. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
- H. Air Contaminant Concentration Test Methods:
 - 1. Formaldehyde: ASTM D5197, EPA 625/R-96/010b Method TO-11A, or EPA 600/4-90/010 Method IP-6A.
 - 2. Particulates: EPA 600/4-90/010 Method IP-10.
 - 3. Total Volatile Organic Compounds (TVOC): EPA 625/R-96/010b Method TO-1, TO-15, or TO-17; or EPA 600/4-90/010 Method IP-1.
 - 4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: ASTM D5197, or EPA 625/R-96/010b Method TO-1, TO-15, or TO-17.
 - 5. Carbon Monoxide: EPA 600/4-90/010 Method IP-3, plus measure outdoor air; measure in ppm; report both indoor and outdoor measurements.
- I. Air Contaminant Concentration Determination and Limits:
 - 1. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
 - 2. Airborne Mold and Mildew: Measure in relation to outside air; not higher than outside air.
 - 3. Formaldehyde: Not more than 50 parts per billion.
 - 4. Formaldehyde: Measure in micrograms per cubic meter, in relation to outside air; not more than 20 micrograms per cubic meter higher than outside air.
 - 5. Total Volatile Organic Compounds (TVOC): Not more than 500 micrograms per cubic meter.
 - 6. Total Volatile Organic Compounds (TVOC): Measure in micrograms per cubic meter, in relation to outside air; not more than 200 micrograms per cubic meter higher than outside air.
 - 7. Particulates (PM10): Not more than 50 micrograms per cubic meter.
 - 8. Total Particulates (PM): Measure in micrograms per cubic meter, in relation to outside air; not more than 20 micrograms per cubic meter higher than outside air.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 SUBMITTALS

- A. Proposed Products List: Submit list of major products that comply with the specifications and are proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Subcontract Award Notice.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- D. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing CFC's or HCFC's.
 - 2. Made of wood from newly cut old growth timber.
 - 3. Containing lead, cadmium, or asbestos.
- C. Packaging:

1. Where Contractor has the option to provide one of the listed products or equal, preference shall be given to products with minimal packaging and easily recyclable packaging as defined in ASTM D5834.
 2. Maximize use of source reduction and recycling procedures outlined in ASTM D5834.
- D. Where other criteria are met, Contractor shall give preference to products that:
1. If used on interior, have lower emissions, as defined in Section 01 6116.
 2. If wet-applied, have lower VOC content, as defined in Section 01 6116.
 3. Are extracted, harvested, and/or manufactured closer to the location of the project.
 4. Have longer documented life span under normal use.
 5. Result in less construction waste. See Section 01 7419
 6. Are made of recycled materials.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

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

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 1000 - Summary for identification of Owner-supplied products.
- B. Owner's Responsibilities:
 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 2. Arrange and pay for product delivery to site.
 3. On delivery, inspect products jointly with Contractor.
 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 1. Review Owner reviewed shop drawings, product data, and samples.
 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 3. Handle, store, install and finish products.
 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.

- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 6023
SUBSTITUTION REQUEST FORM

SUBSTITUTION REQUEST: DATE SUBMITTED _____

1.01 SUBMIT TO: PIVOT ARCHITECTURE, 44 WEST BROADWAY #300, EUGENE OR 97401-3038

A. All Substitution Requests shall be submitted via e-mail to **keck@pivotarchitecture.com**.

1.02 PROJECT: _____

1.03 SPECIFIED ITEM:

A. SECTION NAME AND NUMBER: _____

B. PRODUCT TYPE AND NAME AND MODEL: _____

C. PARAGRAPH AND PRODUCT DESCRIPTION: _____

1.04 PROPOSED SUBSTITUTION:

A. MANUFACTURER AND MODEL NUMBER(S): _____

B. PRODUCT DESCRIPTION: _____

C. Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions. Attached data also includes description of changes to Contract Documents the proposed substitution requires for proper installation.

1.05 UNDERSIGNED CERTIFIES FOLLOWING ITEMS, UNLESS MODIFIED BY ATTACHMENTS, ARE CORRECT:

A. Proposed substitution does not affect dimensions shown on the drawings.

B. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.

C. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.

D. Maintenance and service parts are available locally or readily obtainable for proposed substitution.

1.06 UNDERSIGNED FURTHER CERTIFIES FUNCTION, APPEARANCE, AND QUALITY OF PROPOSED SUBSTITUTION ARE EQUIVALENT OR SUPERIOR TO SPECIFIED ITEM.

1.07 UNDERSIGNED FURTHER CERTIFIES THAT THE MANUFACTURER OF THE PROPOSED SUBSTITUTION IS AWARE OF THIS SUBSTITUTION REQUEST AND AGREES TO THE STATEMENTS NOTED ABOVE.

1.08 UNDERSIGNED AGREES THAT THE TERMS AND CONDITIONS FOR SUBSTITUTIONS FOUND IN BIDDING DOCUMENTS APPLY TO THIS PROPOSED SUBSTITUTION.

1.09 SUBMITTED BY:

A. NAME: _____

SIGNATURE: _____

B. FIRM NAME: _____

C. FULL MAILING ADDRESS: _____

D. PHONE: _____ E-MAIL: _____

1.10 FOR USE BY ARCHITECT OR ENGINEER

A. APPROVED OR APPROVED AS NOTED BY:

B. NOT APPROVED BY: _____

- C. RECEIVED TOO LATE: _____
- D. REMARKS: _____
- E. DATE OF RESPONSE: _____

END OF SECTION

SECTION 01 6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for Indoor-Emissions-Restricted products.
- B. Requirements for VOC-Content-Restricted products.
- C. Requirement for installer certification that they did not use any non-compliant products.
- D. VOC restrictions for product categories listed below under "DEFINITIONS."
- E. All products of each category that are installed in the project must comply; Owner's project goals do not allow for partial compliance.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 4000 - Quality Requirements: Procedures for testing and certifications.
- C. Section 01 5721 - Indoor Air Quality Controls: Procedures and testing.
- D. Section 01 6000 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
- B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
 - 1. Interior paints and coatings applied on site.
 - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
- C. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
 - 1. Adhesives, sealants, and sealer coatings.
 - 2. Carpet.
 - 3. Carpet tile.
 - 4. Resilient floor coverings.
 - 5. Paints and coatings.
 - 6. Insulation.
 - 7. Gypsum board.
 - 8. Acoustical ceilings and panels.
 - 9. Cabinet work.
 - 10. Wall coverings.
 - 11. Composite wood and agrifiber products used either alone or as part of another product.
 - 12. Other products when specifically stated in the specifications.
- D. Interior of Building: Anywhere inside the exterior weather barrier.
- E. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- F. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- G. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
 - 1. Concrete.
 - 2. Clay brick.
 - 3. Metals that are plated, anodized, or powder-coated.

4. Glass.
5. Ceramics.
6. Solid wood flooring that is unfinished and untreated.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2018).
- C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.
- D. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Current Edition.
- E. GreenSeal GC-03 - Anti-Corrosive Paints; Green Seal, Inc.; 2007
- F. GreenSeal GS-11 - Paints; Green Seal, Inc.; 1993.
- G. GreenSeal GS-36 - Standard for Adhesives for Commercial Use; 2013.
- H. SCAQMD 1113 - Architectural Coatings; 1977, with Amendment (2016).
- I. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2017).
- J. SCS (CPD) - SCS Certified Products; Current Edition.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Evidence of Compliance: Submit for each different product in each applicable category.
- C. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- D. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.06 QUALITY ASSURANCE

- A. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Report of laboratory testing performed in accordance with requirements.
- B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
 1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
 2. Joint Sealants: SCAQMD 1168 Rule.
 3. Paints and Coatings: Each color; most stringent of the following:
 - a. 40 CFR 59, Subpart D.
 - b. SCAQMD 1113 Rule.
 - c. CARB (SCM).

- C. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.
1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers and fire stopping.
 2. LEED: This provision is applicable to LEED Credit EQ 4.1; submit LEED Prohibited Content Installer Certification Forms and all support material per section 01 35 16.07.
 3. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Report of laboratory testing performed in accordance with requirements.
 - 2) Published product data showing compliance with requirements.
 - 3) Certification by manufacturer that product complies with requirements.
 4. SCAQMD limits for specific product categories:
 - a. Architectural Applications VOC Limit g/L less water
 - 1) Indoor Carpet Adhesives 50
 - 2) Carpet Pad Adhesives 50
 - 3) Outdoor Carpet Adhesives 150
 - 4) Wood Flooring Adhesive 100
 - 5) Rubber Floor Adhesives 60
 - 6) Subfloor Adhesives 50
 - 7) Ceramic Tile Adhesives 65
 - 8) VCT and Asphalt Tile Adhesives 50
 - 9) Dry Wall and Panel Adhesives 50
 - 10) Cove Base Adhesives 50
 - 11) Multipurpose Construction Adhesives 70
 - 12) Structural Glazing Adhesives 100
 - 13) Single Ply Roof Membrane Adhesives 250
 - b. Specialty Applications VOC Limits g/L less water
 - 1) PVC Welding 510
 - 2) CPVC Welding 490
 - 3) ABS Welding 325
 - 4) Plastic Cement Welding 250
 - 5) Adhesive Primer for Plastic 550
 - 6) Computer Diskette Manufacturing 350
 - 7) Contact Adhesive 80
 - 8) Special Purpose Contact Adhesive 250
 - 9) Tire Retread 100
 - 10) Adhesive Primer for Traffic Marking Tape 150
 - 11) Structural Wood Member Adhesive 140
 - 12) Sheet Applied Rubber Lining Operations 850
 - 13) Top and Trim Adhesive 250
 - c. Substrate Specific Applications VOC Limit g/L less water
 - 1) Metal to Metal 30
 - 2) Plastic Foams 50
 - 3) Porous Material (except wood) 50
 - 4) Wood 30
 - 5) Fiberglass 80
 - d. Sealants VOC Limit g/L less water
 - 1) Architectural 250
 - 2) Marine Deck 760
 - 3) Nonmembrane Roof 300
 - 4) Roadway 250

- 5) Single-Ply Roof Membrane 450
- 6) Other 420
- e. Sealant Primers VOC Limit g/L less water
 - 1) Architectural Non Porous 250
 - 2) Architectural Porous 775
 - 3) Modified Bituminous 500
 - 4) Marine Deck 760
 - 5) Other 750
- D. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
 - 1. LEED: This provision is applicable to LEED Credit EQ 4.1; submit LEED Prohibited Content Installer Certification Forms and all support material per section 01 35 16.07
 - 2. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Current GreenSeal Certification.
 - 2) Report of laboratory testing performed in accordance with GreenSeal GS-36 requirements.
 - 3) Published product data showing compliance with requirements.
 - 3. GreenSeal limits for specific product categories:
 - a. Aerosol Adhesives VOC Weight g/L minus water
 - 1) General purpose mist spray 65% VOCs by weight
 - 2) General purpose web spray 55% VOCs by weight
 - 3) Special purpose aerosol adhesives (all types) 70% VOCs by weight
- E. Paints and Coatings:
 - 1. Definition: This provision applies to paints and coatings used anywhere on the interior of the building inside the weather barrier, including all primers and sealers.
 - 2. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. Architectural Paints and Coatings: Do not exceed VOC content limits established in GreenSeal GS-11.
 - b. Anti-Corrosive and Anti-Rust Paints: Do not exceed VOC content limits established in GreenSeal GS-03.
 - c. Clear Wood Finishes, Floor Coatings, Stains, Primers and Shellacs: Do not exceed the VOC content limits established in SCAQMD Rule No. 1113.
 - 3. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
 - 4. This provision is applicable to LEED Credit EQ 4.1; submit LEED Prohibited Content Installer Certification Forms and all support material per section 01 35 16.07.
 - 5. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Report of laboratory testing performed in accordance with requirements.
 - 2) Published product data showing compliance with requirements.
 - 6. Limits for specific product categories:
 - a. Architectural paints, coatings and primers applied to interior walls and ceilings per GreenSeal GS-11
 - 1) Flats: 50 g/L
 - 2) Non-Flats: 150 g/L
 - 3) Primers 50 g/L
 - b. Interior Anti-Corrosive and Anti-rust paints, coatings and primers per GreenSeal GS-03, Anti-Corrosive Paints
 - 1) 250 g/L

c. All other coatings, paints and sealers per SCAQMD Rule #1113, Architectural Coatings

- 1) Coating Category VOC Limit g/L
 - (a) Bond Breakers 350
 - (b) Clear Wood Finishes 275
 - (c) Varnish 275
 - (d) Sanding Sealers 275
 - (e) Lacquer 275
 - (f) Clear Brushing Lacquer 275
 - (g) Concrete-Curing Compounds 100
 - (h) Concrete-Curing Compounds For Roadways and Bridges 350
 - (i) Dry-Fog Coatings 150
 - (j) Fire-Proofing Exterior Coatings 350
 - (k) Fire-Retardant Coatings Clear 650
 - (l) Fire-Retardant Coatings Pigmented 350
 - (m) Flats 50
 - (n) Floor Coatings 50
 - (o) Graphic Arts (Sign) Coatings 500
 - (p) Industrial Maintenance (IM) Coatings 100
 - (q) High Temperature IM Coatings 420
 - (r) Zinc-Rich IM Primers 100
 - (s) Japans/Faux Finishing Coatings 350
 - (t) Magnesite Cement Coatings 450
 - (u) Mastic Coatings 300
 - (v) Metallic Pigmented Coatings 500
 - (w) Multi-Color Coatings 250
 - (x) Nonflat Coatings 50
 - (y) Nonflat High Gloss 50
 - (z) Pigmented Lacquer 275
 - (aa) Pre-Treatment Wash Primers 420
 - (ab) Primers, Sealers, and Undercoaters 100
 - (ac) Quick-Dry Enamels 50
 - (ad) Quick-Dry Primers, Sealers, and Undercoaters 100
 - (ae) Recycled Coatings 250
 - (af) Roof Coatings 50
 - (ag) Roof Coatings, Aluminum 100
 - (ah) Roof Primers, Bituminous 350
 - (ai) Rust Preventative Coatings 100
 - (aj) Shellac Clear 730
 - (ak) Shellac Pigmented 550
 - (al) Specialty Primers 100
 - (am) Stains 100
 - (an) Stains, Interior 250
 - (ao) Swimming Pool Coatings Repair 340
 - (ap) Swimming Pool Coatings Other 340
 - (aq) Traffic Coatings 100
 - (ar) Waterproofing Sealers 100
 - (as) Waterproofing Concrete/Masonry Sealers 100
 - (at) Wood Preservatives Below-Ground 350
 - (au) Wood Preservatives- Other 350
 - (av) Low-Solids Coating 120

F. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.

1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- G. Carpet Tile and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
 - b. Published product data showing compliance with requirements.
- I. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Requirements for forming openings in existing construction for all work including mechanical and electrical work.
- D. Pre-installation meetings.
- E. Cutting and patching.
- F. Surveying for laying out the work.
- G. Cleaning and protection.
- H. Starting of systems and equipment.
- I. Demonstration and instruction of Owner personnel.
- J. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- K. General requirements for maintenance service.
- L. Substantial completion
- M. Final Completion
- N. Additional fees for delays in completing work

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- E. Section 01 5000 - Temporary Facilities and Controls: Temporary interior partitions.
- F. Section 01 5100 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.
- G. Section 01 7419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- H. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- I. Section 07 8400 - Firestopping.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
 - 1. On request, submit documentation verifying accuracy of survey work.
 - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
 - 3. Submit surveys and survey logs for the project record.
 - 4. Submit a copy of the FEMA Flood Elevation Certificate.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:

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

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

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

1.05 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- E. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
- F. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
1. Minimize amount of bare soil exposed at one time.
 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
1. At All Times: Excessively noisy tools and operations will not be tolerated inside the building at any time of day; excessively noisy includes jackhammers.
 2. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
 3. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- H. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

- I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

- A. See Section 01 1000 for occupancy-related requirements.
- B. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate occupancy requirements.
- C. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- D. Notify affected utility companies and comply with their requirements.
- E. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- F. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- G. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- H. Coordinate completion and clean-up of work of separate sections.
- I. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.07 CONTRACTOR'S FULL TIME SUPERVISION OF THE WORK

- A. Contractor shall provide an on-site project superintendent to be present full time whenever work is occurring on site.
- B. Contractor's Superintendent shall maintain a Daily Log of work activities at the site during construction.
 - 1. Submit copies of the Daily Logs to the Owner on a weekly basis.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

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

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

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

3.06 ALTERATIONS

- A. The stability and integrity of the existing structure during demolition and selective demolition shall be maintained at levels generally acceptable within the construction industry by the use of temporary bracing, shoring, and underpinning until the proposed structure modifications are completed. In no case shall the existing structure be allowed to become unsafe during construction.
- B. The design, installation, and removal of shoring and bracing systems required to provide temporary support of the existing structure during construction shall be the responsibility of the Contractor and shall be designed to support the dead, live, soil, earthquake, and wind loads that may be imposed on the structure during construction in accordance with industry standards and generally accepted engineering principals. Provide the services of a registered professional engineer to design these systems when required by Oregon State Statute and the building code.
- C. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- D. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
 - 2. Provide appropriate temporary signage including signage for exit or building egress.
- E. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- F. Comply with regulatory requirements for Alteration Work:
 - 1. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection .
 - 2. Obtain required permits from authorities.
 - 3. Do not close or obstruct egress from any building exit or site exit.
 - 4. Do not disable or disrupt building fire or life safety systems without 3 days' prior written notice to Owner.
 - 5. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered. Stop all work in the area and notify the Owner's representative.
 - a. Owner will provide verification, abatement, and removal as required to complete the Work.
- G. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Relocate items indicated on drawings.
 - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- H. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.

1. Notify affected utility companies before starting work and comply with their requirements.
 2. Mark location and termination of utilities.
 3. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 4. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruption of existing utilities, as acceptable to the Owner
 5. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 6. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 7. Verify that abandoned services serve only abandoned facilities.
 8. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- I. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Cover finish floors to remain.
 5. Use only rubber tired vehicles for conveying materials in building.
- J. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
 4. Trim existing wood doors as necessary by undercutting door to clear new floor finish. Refinish cut edge as required.
 5. Modify any existing wall, ceiling or floor trim as necessary to conform to new construction and provide a finished look matching existing. Refinish trim and exposed ends and edges as required.
- K. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- L. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- M. Clean existing systems and equipment.

- N. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- O. Clean remaining structure, equipment and facilities of all dirt, dust, and debris caused by demolition work. Return areas to conditions existing prior to the start of the work.
- P. Do not begin new construction in alterations areas before demolition is complete.
- Q. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces. Where existing warranties are still in effect employ manufacturer authorized installer to perform this work.
- F. Cut concrete, masonry and other similar rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Sawcutting:
 - 1. Employ experienced sawcutting contractor to make all holes, or slab and pavement cutting shown in drawings for architectural, structural, mechanical and electrical work.
 - 2. Do not use water saws in occupied areas, unless otherwise approved.
 - 3. Cut openings square and plumb with sharp edges. Minimize overcutting at corners.
 - 4. Verify location of existing utilities in work area and make proper precautions to protect, disconnect and relocate, or terminate services as directed.
- K. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly or defined section, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- L. Maintain adequate Temporary Support necessary to assure structural integrity of affected Work.
- M. Protect other portions of Project Work against damage and discoloration.

- N. Protect Work exposed to cutting against damage and discoloration.
- O. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly or defined section, refinish entire unit.
- P. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- Q. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect and Owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

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

3.12 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Testing, adjusting, and balancing HVAC systems: See Section 23 0593 - Testing, Adjusting, and Balancing for HVAC.

3.13 FINAL CLEANING

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

3.14 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Architect and Owner.
- B. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

3.15 SUBSTANTIAL COMPLETION

- A. Notify Architect when work is considered ready for Substantial Completion.
- B. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- C. Complete all required maintenance work prior to the date of substantial completion.

- D. When Contractor considers Work substantially complete, as defined in General Conditions, submit to the Architect:
 - 1. Written notice that Work, or designated portion thereof, is substantially complete.
 - 2. List of Items to be completed or corrected.
 - 3. Copy of Final or Temporary Occupancy Permit.
- E. Architect will, as soon as possible thereafter, make an observation visit to the site to determine completion status.
- F. Should Architect determine that Work is not substantially complete:
 - 1. Architect will promptly notify Contractor in writing, giving reasons therefore.
 - 2. Contractor shall remedy Work deficiencies, and send second notice of substantial completion to Architect.
 - 3. Architect will review the corrected work.
- G. When Architect concurs that Work is substantially complete, Architect will:
 - 1. Prepare Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by Architect.
 - 2. Submit Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.
- H. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.

3.16 FINAL ACCEPTANCE

- A. When Contractor considers Work complete, submit written certification to Architect and Owner that:
 - 1. Contract Documents have been reviewed.
 - 2. Contractor has inspected Work for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. Equipment and Systems have been tested in presence of Owner's Representative and are operational.
 - 5. Work is complete and ready for final inspection.
- B. Architect will, as soon as possible thereafter, make an observation visit to the site to determine completion status.
- C. Should Architect consider Work incomplete or defective:
 - 1. Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
 - 2. Contractor shall immediately remedy deficiencies, and send second written certification to Architect that Work is complete.
 - 3. Architect will review the corrected Work.
- D. Notify Architect when work is considered finally complete.
- E. When Architect finds Work acceptable under Contract Documents, Architect will request Contractor to make final closeout submittals.

3.17 ADDITIONAL FEES FOR DELAYS IN COMPLETING THE WORK

- A. Architect will make 2 visits to the project site, one at Substantial Completion and one at Final Completion.
- B. Should Architect be required to make more than the stated 2 final site visits due to Contractor's failure to correct specified deficiencies:
 - 1. Owner will compensate Architect for additional services.
 - 2. Owner will deduct Architect's compensation amount from Contractor's final payment as follows:
 - a. Principal's time at \$150.00 per hour.
 - b. Employees' time at \$95.00 per hour.
 - c. Consultant employees and Others at 1.1 times the direct cost incurred.

- d. Charges will be made for necessary travel time, commercial air fare, auto expense computed at 55 cents per mile, room and board, and all other expenses incurred in making inspections.

END OF SECTION

SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Wood pallets.
 - 4. Clean dimensional wood.
 - 5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 1000 - Site Clearing for use options.
 - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 7. Fluorescent lamps (light bulbs).
- E. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.
- F. Develop and follow a Waste Management Plan designed to implement these requirements.
- G. The following sources may be useful in developing the Waste Management Plan:
 - 1. Lane County Waste Management (541) 682-4119.
- H. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
 - 5. Incineration, either on- or off-site.
 - 6. Use of Owner's trash receptacles.
- I. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitability, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Submit Waste Management Plan within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.
- C. Waste Management Plan: Include the following information:
 - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
- D. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
 - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
 - 2. Submit Report on a form acceptable to Owner.
 - 3. Landfill Disposal: Include the following information:
 - a. Identification of material.

- b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
 - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
- 4. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
 - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
- 5. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons or cubic yards.
 - c. Include weight tickets as evidence of quantity.
- 6. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Spill Response Planning - Establish spill prevention and cleanup procedures. Identify all potential spill areas and develop procedures for avoiding and responding to spills should they occur.
- C. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- D. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- E. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
- F. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
 - 4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- G. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

- H. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- I. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- J. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 RELATED REQUIREMENTS

- A. Section 00 7200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Substantial Completion will not commence before the Operations and Maintenance Manuals, Warranties, and the Record Drawings are submitted in accordance with this section Administrative Requirements Section 01 3000.
- B. Project Record Documents: Submit documents to Architect Prior to Date of Substantial Completion.
- C. Operation and Maintenance Data:
 - 1. Submit one digital copy of preliminary draft or proposed formats and outlines of contents to Architect before start of Work preparing the O&M Data. Architect will review draft and return the one copy with comments. Architect will review draft and return any comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one digital draft copy of complete Operation and Maintenance documents to Architect at least 30 days prior to scheduled Date of Substantial Completion. This copy will be reviewed and returned , with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Final Submittal: Prior to the Date of Substantial Completion submit three digital copies in PDF file format on CD or DVD discs, and three paper sets of revised final documents in final form to Architect. After final review Architect will transfer this material to Owner.
 - 5. Either the draft copy or the final copy of the O&M manuals must be on the project site during any of the operator training scheduled for the project.
- D. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
 - 4. Submit three digital copies in PDF file format on CD or DVD discs, and three paper sets of final documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
- B. Maintenance of documents and samples.
 - 1. Store in Contractor's Field Office apart from Documents used for Construction.
 - 2. Provide Files, Shelving and Cabinets necessary to safely and securely store Documents and Samples.
 - 3. Maintain Documents in a clean, dry, legible, and good order.
 - 4. Do not use Record Documents for Construction Purposes.
 - 5. Make Documents available at all times for Architect's review.
- C. Ensure entries are complete and accurate, enabling future reference by Owner.
- D. Store record documents separate from documents used for construction.
- E. Record information concurrent with construction progress.
- F. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- G. Record Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

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

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. In addition to requirements called for in other sections of this manual, provide the following:
- B. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- D. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- E. Include color coded wiring diagrams as installed.
- F. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- G. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- H. Provide servicing and lubrication schedule, and list of lubricants required.
- I. Include manufacturer's printed operation and maintenance instructions.
- J. Include sequence of operation by controls manufacturer.
- K. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- L. Provide control diagrams by controls manufacturer as installed.
- M. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- N. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- O. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- P. Include test and balancing reports.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble paper copies of operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

- C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- D. Prepare data in the form of an instructional manual.
- E. Digital O&M Manuals: In addition to binders described herein, prepare manuals as PDF documents organized similar to the printed manuals. Copy to one or more properly labeled CD or DVD discs.
 - 1. Digital O&M Manuals shall contain a searchable Table of Contents
 - 2. Digital copies of O&M Manuals must be organized by section.
 - 3. All markup of final PDF documents shall be produced using appropriate PDF editing software, and shall not be handwritten. Final PDF documents shall not be scanned copies of original documents, but shall be submitted in their original digital form and remain fully searchable using PDF viewing software in common use.
- F. Paper & 3 Ring Binder O&M Manuals: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- G. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- H. Project Directory: Title and address of Project; names, addresses, e-mail addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- I. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- J. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- K. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- L. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- M. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- N. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - 1. Part 1: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 2. Part 2: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Photocopies of warranties and bonds.
- O. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

- P. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and when required have been notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

3.07 EVIDENCE OF PAYMENTS & RELEASE OF LIENS

- A. Contractor shall submit the following:
 - 1. Contractor's Affidavit of Payment of Debts and Claims, AIA Document G-706. A copy of this Form is bound in the Appendix Section of this manual.
 - 2. Contractor's Affidavit of Release of Liens, AIA Document G-706A, bound in the Appendix Section of this manual, including the following:
 - a. Consent of Contractor's Surety to Final Payment, AIA Document G-707, bound in the Appendix Section of this manual.
 - b. Contractor's Release or Waiver of Liens.
 - c. Separate releases or waivers of lien for Subcontractors, Suppliers, and others with lien rights against Owner's Property, together with list of those parties.
 - 3. Duly sign and execute all Submittals, before delivery to Architect.

3.08 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ARCHITECT

- A. Wage Certification: Section 00 7343 and 01 2000.
- B. Certificate of Domestic Water Disinfection. See Division 33.
- C. Building Official's Certificate of Mechanical & Electrical Inspections.
- D. Building Official's Certificate of Occupancy.

3.09 SPARE PART & MAINTENANCE MATERIAL SUBMITTALS TO OWNER

- A. All spare parts and extra material are to be delivered to the owner prior to the date of substantial completion. Provide written confirmation of delivery, noting quantity and description as well as storage location. Obtain written acceptance from Owner for receipt of stored items.
- B. Specific Requirements: See Specifications Sections.
- C. Products: Identical to those included in Project Work.
- D. Storage Location: Where directed by Owner.

- E. Required Submittals: See Specification Sections.

3.10 PROPRIETARY TOOLS AND SOFTWARE

- A. Provide all proprietary tools, software, and diagnostic equipment necessary for the Owner to perform routine maintenance, repairs, and trouble shooting of equipment and systems that are installed as part of this work.

3.11 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Architect, including the following:
 - 1. Original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Adjustments to Cash Allowances
 - c. Other adjustments.
 - d. Deductions for uncompleted Work.
 - e. Deductions for Reinspection Payments.
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous Payments.
 - 5. Sum remaining due.
- B. Architect will prepare and issue final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

3.12 FINAL APPLICATION FOR PAYMENT

- A. Follow procedures specified in Section 01 2000.

END OF SECTION

SECTION 03 1000
CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.
- E. Waterstops
- F. Placement of anchor bolts, embed plates, and anchorages

1.02 RELATED REQUIREMENTS

- A. Section 03 2000 - Concrete Reinforcing.
- B. Section 03 3000 - Cast-in-Place Concrete.
- C. Section 03 3500 - Concrete Floor Finishes: Specially surfaced concrete.
- D. Section 03 3543 - Polished Concrete Finishing: Finishing for new concrete slabs
- E. Section 05 1200 - Structural Steel Framing: Anchor bolts for Structural Steel.
- F. Section 05 5000 - Metal Fabrications: Anchor Bolts for Metal Fabrications and other trades.
- G. Section 06 1000 - Rough Carpentry: Anchor bolts for Rough Carpentry.
- H. Section 07 2100 - Thermal Insulation: Underslab insulation.

1.03 REFERENCE STANDARDS

- A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
- B. ACI 301 - Specifications for Concrete Construction; 2020.
- C. AISC S303 - Code of Standard Practice for Steel Buildings and Bridges; American Institute of Steel Construction, Inc.; 2000.
- D. OSSC - Oregon Structural Specialty Code, latest edition.

1.04 SUBMITTALS

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

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

- A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.
- B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.
- C. Chamfer outside corners of beams, joists, columns, and walls unless otherwise indicated on Drawings.
- D. Formwork design and engineering are Contractor's responsibility. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

2.02 WOOD FORM MATERIALS

- A. Form Materials:
 - 1. At exposed vertical surfaces: MDO plywood, smooth and free of any surface texture.
 - 2. At other locations: Contractor discretion in accordance with ACI 347.

2.03 FORMWORK ACCESSORIES

- A. Form Ties: Removable type, galvanized metal, fixed length, cone type, with waterproofing washer, one inch back break dimension, free of defects that could leave holes larger than 1 inch (25 mm) in concrete surface.
- B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
 - 1. Composition: Colorless, reactive, water-based or solvent-based compound.
- C. Reveal / Chamfer Strips: Rigid plastic or wood strip type; 3/4 x 3/4 inch size unless otherwise noted on Drawings; maximum possible lengths. Mill wood strips from straight-grained lumber and surface all sides.
- D. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 05 1200.
- E. Waterstops: Expandable Bentonite type. 1 inch wide by 1/2 inch thick (dry), strips of maximum possible lengths, moisture expanding. Provide Superstop manufactured by Tremco, or approved.
 - 1. Extent: At all cold joints below grade, and elsewhere as shown on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.
- B. Verify subgrade is at proper depth to accommodate footing and slab thickness.

3.02 EARTH FORMS

- A. Earth forms are not permitted.

3.03 ERECTION - FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Unless otherwise indicated, install form ties equidistant and symmetrical, aligned vertically and horizontally.
- F. Obtain approval before framing openings in structural members that are not indicated on drawings.
- G. Provide chamfer strips at the following locations:
 - 1. External corners.
 - 2. Locations indicated on Drawings.
- H. Coordinate this section with other sections of work that require attachment of components to formwork.
- I. If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Architect before proceeding.

3.04 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work.
- B. Locate and set in place items that will be cast directly into concrete. Do not 'wet set'.
- C. Place anchor bolts in accordance with AISC Code of Standard Practice.
- D. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- E. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- F. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Ensure that minimum coverage is provided from waterstop to face of concrete.
- G. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- H. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.06 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.

3.07 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.

3.08 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

3.09 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

END OF SECTION

SECTION 03 2000
CONCRETE REINFORCING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Steel reinforcement bars.

1.02 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Each type of steel reinforcement.
 - 2. Bar supports.
- B. Shop Drawings: Comply with ACI SP-066:
 - 1. Include placing drawings that detail fabrication, bending, and placement.
 - 2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.
- C. Construction Joint Layout: Indicate proposed construction joints required to build the structure.
 - 1. Location of construction joints is subject to approval of Architect.

1.03 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Epoxy-Coated Reinforcement: CRSI's "Epoxy Coating Plant Certification."
- B. Material Test Reports: For the Following, from a qualified testing agency:
 - 1. Steel Reinforcement:
 - a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706/A706M.

PART 2 PRODUCTS

2.01 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420) deformed.
- B. Headed-Steel Reinforcing Bars: ASTM A970/A970M.

2.02 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place.
 - 1. Manufacture bar supports from steel wire, plastic, or precast concrete in accordance with CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - a. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire, all-plastic bar supports, or CRSI Class 2 stainless steel bar supports.
 - b. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.
- B. Steel Tie Wire: ASTM A1064/A1064M, annealed steel, not less than 0.0508 inch (1.2908 mm) in diameter.
 - 1. Finish: Plain

2.03 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

PART 3 EXECUTION

3.01 PREPARATION

- A. Protection of In-Place Conditions:
 - 1. Do not cut or puncture vapor retarder.
 - 2. Repair damage and reseal vapor retarder before placing concrete.

- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.02 INSTALLATION OF STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for placing and support reinforcement.
- B. Accurately position, support, and secure reinforcement against displacement.
 - 1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
 - 2. Do not tack weld crossing reinforcement bars.
- C. Preserve clearance between bars of not less than 1 inch (25 mm), not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.
- D. Provide concrete coverage in accordance with ACI 318 (ACI 318M).
- E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- F. Splices: Lap splices as indicated on Drawings.
 - 1. Bars indicated to be continuous, and all vertical bars to be lapped not less than 36 bar diameters at splices, or 24 inches (610 mm), whichever is greater.
 - 2. Stagger splices in accordance with ACI 318 (ACI 318M).

3.03 JOINTS

- A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement.
 - 2. Continue reinforcement across construction joints unless otherwise indicated.
 - 3. Do not continue reinforcement through sides of strip placements of floors and slabs.

3.04 INSTALLATION TOLERANCES

- A. Comply with ACI 117 (ACI 117M).

3.05 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare test reports.
- B. Inspections:
 - 1. Steel-reinforcement placement.

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Footings, stem walls, and slabs on grade.
- B. Site walls and seating walls.
- C. Joint devices associated with concrete work.
- D. Miscellaneous concrete elements, including equipment pads, equipment pits, light pole bases, flagpole bases, thrust blocks, and manholes.
- E. Concrete curing.
- F. Underslab vapor barriers.

1.02 RELATED REQUIREMENTS

- A. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork; placement of anchors and embeds.
- B. Section 03 2000 - Concrete Reinforcing.
- C. Section 03 3511 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings.
- D. Section 03 3543 - Polished Concrete Finishing: Polishing and finishing of concrete surfaces.
- E. Section 05 12 00 - Structural Steel: Grouting under base plates.
- F. Section 07 9200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.
- G. Section 32 1313 - Concrete Paving: Sidewalks, curbs and gutters.

1.03 REFERENCE STANDARDS

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).
- B. ACI 301 - Specifications for Concrete Construction; 2020.
- C. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.
- D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- E. ACI 305R - Guide to Hot Weather Concreting; 2010.
- F. ACI 306R - Guide to Cold Weather Concreting; 2016.
- G. ACI 308R - Guide to External Curing of Concrete; 2016.
- H. ACI 318 - Building Code Requirements for Structural Concrete; 2019, with Errata (2021).
- I. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.
- J. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2020.
- K. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2020.
- L. ASTM C150/C150M - Standard Specification for Portland Cement; 2021.
- M. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.
- N. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- O. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019.
- P. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

- Q. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.
- R. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.
- S. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 2014.
- T. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.
- U. NSF 61 - Drinking Water System Components - Health Effects; 2021.
- V. NSF 372 - Drinking Water System Components - Lead Content; 2022.
- W. OSSC - Oregon Structural Specialty Code, latest edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix Design: Submit proposed concrete mix design.
 - 1. Indicate proposed mix design complies with requirements of ACI 318, Chapter 26 - Concrete Quality, Mixing and Placing, and requirements of the OSSC.
- D. Samples: Submit samples of underslab vapor retarder to be used.
- E. Test Reports: Submit report for each test or series of tests specified.
- F. Slab Jointing Plan: Show location of slab control joints, closure panels, and slab construction joints not shown on Drawings.
- G. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.

1.06 MOCK-UP

- A. Construct and erect mock-up panel for architectural concrete surfaces indicated to receive special treatment or finish such as broom finish:
 - 1. Panel Size: 6 by 6 feet (2 by 2 meters).
 - 2. Number of Panels: Two.
 - 3. Locate where directed.
- B. Coordinate with Work of Section 03 3543 - Polished Concrete Finishing for casting slabs for mock-ups of polished concrete flooring.
- C. Accepted mock-up panel is considered basis of quality for the finished work. Keep mock-up exposed to view for duration of concrete work.
- D. Mock-up may not remain as part of the Work.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Comply with requirements of Section 03 1000.

2.02 REINFORCEMENT MATERIALS

- A. Comply with requirements of Section 03 2000.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal, or Type II - Moderate Portland type.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Slag: Ground Granulated Blast-Furnace Slag; ASTM C989, Grade 100 or 120.
- E. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement. Calcium chloride is not allowed.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
- E. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder: Multi-layer, fabric-, cord-, grid-, or aluminum-reinforced polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs; 15 mils thickness, maximum perm rating of 0.025. The use of single ply polyethylene is prohibited.
 - 1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
 - 2. Manufacturers:
 - a. ISI Building Products; Viper VaporCheck II 15-mil (Class A): www.isibp.com.
 - b. Stego Industries, LLC: www.stegoindustries.com.
 - c. Raven Industries; Rufco 3000B, or VaporBlock 15: www.ravenind.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
 - 3. Extent of Use: Under all interior slabs-on-grade, unless otherwise noted.
- B. Screw Anchors for Concrete and Masonry: Carbon steel, heat treated, since plated Heavy duty screw anchor. Use where shown on drawings. Simpson Strong-Tie Titen HD, Power's Wedge-Bolt, or approved.
- C. Anti-Skateboard Devices:
 - 1. Manufacturer:
 - a. Ravensforge Skateboard Solutions (www.skateblock.com)
 - b. Substitutions: See Section 01 60 00 - Product Requirements
 - 2. Style: Flatbar, "L" Shape type. Inside angle to match wall chamfer dimension.
 - 3. Material: Bronze
 - 4. Dimensions: 1 1/2 inch by 3 inches.
 - 5. Installation Method: Drill and set in concrete with epoxy anchors.
 - 6. Extent: Provide at top of concrete walls and caps as indicated on Drawings.

2.06 BONDING AND JOINTING PRODUCTS

- A. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
 - 1. Configuration: As indicated on drawings.
 - 2. Manufacturers:
 - a. CETCO, a division of Minerals Technologies Inc; WATERSTOP RX: www.mineralstech.com.
 - b. The Penetron Group; Penebar SW-55: www.penetron.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- B. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.
 - 1. Material: ASTM D1751, cellulose fiber.

2.07 CURING MATERIALS

- A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound, that dissipates within 3 to 5 weeks; complying with ASTM C309, Type 1.
 - 1. Ensure compatibility with Hardeners, Sealers, or Coatings specified in Section 03 3511.
- B. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
 - 1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
 - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
 - 2. Supplier is responsible for achieving or exceeding concrete design strengths.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
 - 1. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.
 - 2. Use set retarding admixtures during hot weather only when approved by Architect.
- D. Add air entraining agent to normal weight concrete mix for horizontal work exposed to exterior.
- E. Normal Weight Concrete:
 - 1. At Footings:
 - a. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: As indicated on drawings.
 - b. Fly Ash or Slag Content: Minimum 15 percent and maximum 25 percent of cementitious materials by weight.
 - c. Water-Cement Ratio: See Structural Drawings.
 - d. Total Air Content: 1-1/2 percent, plus or minus 1-1/2%, per ASTM C 173 .
 - e. Maximum Aggregate Size: See Structural Drawings.
 - 2. Interior Slab Foundations:
 - a. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: As indicated on drawings.
 - b. Fly Ash or Slag Content: Minimum 15 percent and maximum 25 percent of cementitious materials by weight.
 - c. Water-Cement Ratio: See Structural Drawings.
 - d. Maximum Aggregate Size: 3/4 inch (19 mm).
 - 4. At Building Slabs-on-Grade continuously exposed to the exterior:
 - a. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 4500 psi (____ Mpa).
 - b. Fly Ash or Slag Content: Minimum 15 percent and maximum 25 percent of cementitious materials by weight.
 - c. Water-Cement Ratio: Maximum 45 percent by weight.
 - d. Entrained Air Content: 5 percent, plus or minus 1%, per ASTM C 173.
 - e. Maximum Aggregate Size: 3/4 inch (19 mm).

2.09 MIXING

- A. Transit Mixers: Comply with ASTM C94/C94M.
- B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Verify that forms are clean and free of rust before applying release agent.
- B. Verify that Surfaces to receive Vapor Barrier are clean, solid, free of projections and otherwise properly prepared.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- F. Vapor Barrier at Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Place concrete for floor slabs in accordance with ACI 302.1R.
- C. Notify Architect not less than 48 hours prior to commencement of placement operations.
- D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
- E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
- F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.04 SLAB JOINTING

- A. Locate joints as indicated on Slab Jointing Plan approved through shop drawing submittal review process.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
 - 1. Install where indicated on drawings, and wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
- D. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.
- E. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch (5 mm) thick blade and cut at least 1 inch (25 mm) deep but not less than one quarter (1/4) the depth of the slab.

3.05 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Maximum Variation of Surface Flatness:
 - 1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 feet (3 m).
 - 2. Under Seamless Resilient Flooring: 1/4 inch (6 mm) in 10 feet (3 m).
 - 3. Under Carpeting: 1/4 inch (6 mm) in 10 feet (3 m).
- B. Correct the slab surface if tolerances are other than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified by the Architect. Re-measure corrected areas by the same process.

3.06 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch (6 mm) or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch (6 mm) or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
- D. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.
- E. Concrete Polishing: See Section 03 3511.
- F. Exterior Concrete Walks & Slabs: Broom finish unless otherwise noted.

3.07 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Surfaces Not in Contact with Forms:
 - 1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
 - 2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-fog spray, or saturated burlap.
 - a. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 7 days.
 - b. Spraying: Spray water over floor slab areas and maintain wet.
 - c. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
 - 3. Final Curing: Begin after initial curing but before surface is dry.
 - a. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.08 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. An independent testing agency will perform Special Inspection for footings, as specified in Section 01400.
- C. Provide free access to concrete operations at project site and cooperate with appointed firm. Notify Architect and Testing Lab at least 48 hours before intended concrete placement.
- D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- E. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
- F. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure a set of five concrete test cylinders. Obtain test samples for every 150 cu yd (_____ cu m) or less of each class of concrete placed each day.
 - 1. Perform compressive strength tests on sets of cylinders at their respective age as follows:
 - a. One at seven days

- b. One at 14 days
 - c. Two at 28 days, and
 - d. Hold one for future use
- 2. If at the end of the project all of the concrete reaches the required compressive strength, the held cylinders may be discarded without being tested.
- G. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- H. Perform one air content test for each set of cylinders taken for air-entrained concrete, following procedures of ASTM C173/C173M.

3.09 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.10 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

**SECTION 03 3511
CONCRETE FLOOR FINISHES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface treatments for concrete floors and slabs.
- B. Liquid densifiers and hardeners.
- C. Sealer/hardener: SLR
- D. Concrete Stains: CS
- E. Moisture Mitigation Coating.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.
- B. Section 03 3000 - Cast-in-Place Concrete: Curing compounds that also function as sealers.
- C. Section 03 3543 - Polished Concrete Finishing: surface treatments.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.

1.05 MOCK-UP

- A. For coatings, construct mock-up area under conditions similar to those that will exist during application, with coatings applied.
- B. Mock-Up Size: 10 feet square.
- C. Locate where directed.
- D. Mock-up may remain as part of the work.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

PART 2 PRODUCTS

2.01 CONCRETE FLOOR FINISH APPLICATIONS

2.02 DENSIFIERS AND HARDENERS

- A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores, hardening, and dustproofing.
 - 1. Composition: Sodium silicate. Odorless, colorless, waterborne solution, compliant with project's VOC requirements.
 - 2. Products:
 - a. Ardex Engineered Cements; www.ardexamericas.com.
 - b. Curecrete Distribution, Inc.; Ashford Formula: www.ashfordformula.com.
 - c. Dayton Superior Corporation; _____: www.daytonsuperior.com/#sle.

- d. Master Builders Solutions by BASF; Kure-N-Harden: www.master-builders-solutions.basf.us/en-us/#sle.
- e. Euclid Chemical Company; Diamond Hard: www.euclidchemical.com.
- f. L&M Construction Chemicals, Inc; Seal-Hard: www.lmcc.com.
- g. Nox-Crete; Duro-nox.
- h. Vexcon Chemical; Starseal PS Clear.
- i. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 GENERAL

- A. Apply materials in accordance with manufacturer's instructions.

END OF SECTION

SECTION 04 2200
CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Concrete masonry units.
- B. Pre-faced concrete masonry units.
- C. Steel reinforcing bars.

1.02 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For reinforcing steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.
- C. Samples: For each type and color of the following:
 - 1. **[Exposed] [Decorative]** CMUs.
 - 2. Pre-faced CMUs.
 - 3. **[Pigmented] [and] [colored-aggregate]** mortar.

1.04 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each type and size of product. For masonry units, include data on material properties.
- B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 - 1. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
 - 2. Include test reports, in accordance with ASTM C1019, for grout mixes required to comply with compressive strength requirement.

1.05 QUALITY ASSURANCE

- A. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.

1.06 FIELD CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.01 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.
- C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.

2.02 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
 - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. Integral Water Repellent: Provide units made with integral water repellent for exposed units].
- C. CMUs: ASTM C90.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi (19.3 MPa)].
 - 2. Density Classification: Normal weight
- D. Decorative CMUs: ASTM C90.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi (19.3 MPa).
 - 2. Density Classification: Normal weight.
 - 3. Pattern and Texture:
 - a. Standard pattern, ground-face finish.
 - b. Pre-faced CMUs: normal-weight concrete units complying with ASTM C90, with manufacturer's standard smooth resinous facing complying with ASTM C744.
 - 4. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi (19.3 MPa)
 - 5. Size: Manufactured with pre-faced surfaces having 1/16-inch- (1.5-mm-) wide returns of facing to create 1/4-inch- (6.5-mm-) wide mortar joints.
 - 6. Colors and Patterns: As selected by Architect from manufacturer's full range.

2.03 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

- B. Hydrated Lime: ASTM C207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar.
- E. Colored Cement Products: Packaged blend made from portland cement and hydrated lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.
 - 1. Colored Portland Cement-Lime Mix:
- F. Aggregate for Mortar: ASTM C144.
 - 1. White-Mortar Aggregates: Natural white sand or crushed white stone.
 - 2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- G. Aggregate for Grout: ASTM C404.
- H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
- I. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.
- J. Water: Potable.

2.04 REINFORCEMENT

- A. Uncoated-Steel Reinforcing Bars: ASTM A615/A615M or ASTM A996/A996M, Grade 60 (Grade 420).
- B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
- C. Masonry-Joint Reinforcement, General: ASTM A951/A951M.
 - 1. Exterior Walls: Hot-dip galvanized carbon steel.
 - 2. Wire Size for Side Rods: 0.148-inch (3.77-mm) diameter.
 - 3. Wire Size for Cross Rods: 0.148-inch (3.77-mm) diameter.
 - 4. Spacing of Cross Rods: Not more than 16 inches (407 mm) o.c.
 - 5. Provide in lengths of not less than 10 feet (3 m)

2.05 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
 - 1. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, **soft temper; 26 gage, 0.0187 inch thick; finish 2B to 2D..**

2. Copper: ASTM B370, Temper H00, cold-rolled copper sheet, 16-oz./sq. ft. (4.9-kg/sq. m) weight or 0.0216 inch (0.55 mm) thick or ASTM B370, Temper H01, high-yield copper sheet, 12-oz./sq. ft. (3.7-kg/sq. m) weight or 0.0162 inch (0.41 mm) thick.
 3. Fabricate continuous flashings in sections 96 inches (2400 mm) long minimum, but not exceeding 12 feet (3.7 m). Provide splice plates at joints of formed, smooth metal flashing.
 4. Fabricate metal drip edges from stainless steel. Extend at least **3 inches (76 mm)** into wall and **1/2 inch (13 mm)** out from wall, with outer edge bent down 30 degrees[**and hemmed**].
 5.) and down into joint **1/4 inch (6 mm)** to form a stop for retaining sealant backer rod.
 6. Fabricate metal expansion-joint strips from [**stainless steel**] [**copper**] to shapes indicated.
 7. Copper-Laminated Flashing: [**5-oz./sq. ft. (1.5-kg/sq. m)**] [**7-oz./sq. ft. (2-kg/sq. m)**] copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
 8. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than [**0.030 inch (0.76 mm)**] [**0.040 inch (1.02 mm)**].
 9. Butyl Rubber Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than [**0.030 inch (0.76 mm)**] [**0.040 inch (1.02 mm)**].
 10. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymers alloy.
 11. EPDM Flashing: Sheet flashing product made from ethylene-propylene-diene terpolymer, complying with ASTM D4637/D4637M, **0.040 inch (1.0 mm)** thick.
- B. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from UV-resistant, high-density polyethylene. Cell flashing pans have integral weep spouts designed to be built into mortar bed joints and that extend into the cell to prevent clogging with mortar.
- C. Solder and Sealants for Sheet Metal Flashings: As specified in Section 076200 "Sheet Metal Flashing and Trim."
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.06 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from [**neoprene**] [**urethane**] [**or**] [**PVC**].
- B. block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D226/D226M, Type I (No. 15 asphalt felt).

2.07 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use portland cement-lime mortar unless otherwise indicated.
 - 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 - 1. For masonry below grade or in contact with earth, use Type S.
 - 2. For reinforced masonry, use Type S.
 - 3. For mortar parge coats, use Type S.
- D. Pigmented Mortar: Use colored cement product
 - 1. Pigments do not exceed 10 percent of portland cement by weight.
 - 2. Pigments do not exceed 5 percent of masonry cement by weight.
 - 3. Application: Use pigmented mortar for exposed mortar joints with the following units:
 - a. Decorative CMUs. Color(s): A dark gray color selected by Architect from manufacturer's full range.
 - b. Pre-faced CMUs.
- E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
 - 1. Application: Use colored-aggregate mortar for exposed mortar joints with the following units:
 - a. Decorative CMUs.
 - b. Pre-faced CMUs.
- F. Grout for Unit Masonry: Comply with ASTM C476.
 - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.

2. Proportion grout in accordance with ASTM C476, paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi (14 MPa).
3. Provide grout with a slump of 10 to 11 inches (250 to 280 mm) as measured in accordance with ASTM C143/C143M.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.02 TOLERANCES

- A. Dimensions and Locations of Elements:
 1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.
- B. Lines and Levels:
 1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
 3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
 5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
- C. Joints:
 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
 2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).

3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.03 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in stacked bond; do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- D. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.
- E. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.04 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
 3. Bed webs in mortar in grouted masonry, including starting course on footings.
 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
- B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.05 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on both sides of walls. Lap reinforcement a minimum of 6 inches (150 mm).
 1. Space reinforcement not more than 16 inches (406 mm) o.c.
 2. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

3.06 FLASHING

A. Metal Flashing Materials

1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D .

B. Combination Non-Asphaltic Flashing Materials - Stainless Steel :

1. Stainless Steel Flashing - Self-adhering: ASTM A240/A240M; 2 mil type 304 stainless steel sheet with 8 mil of butyl adhesive and a removable release liner.

a. Manufacturers:

- 1) STS Coatings, Inc; _____: www.stscoatings.com/#sle
- 2) VaproShield, LLC; _____: www.vaproshield.com/#sle
- 3) WIRE-BOND; _____: www.wirebond.com/#sle
- 4) York Manufacturing, Inc; York 304: www.yorkmfg.com/#sle
- 5) Substitutions: See Section 01 6000 - Product Requirements.

C. Stainless Steel/Polymer Fabric Flashing: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on one side to one sheet of polymer fabric.

1. Manufacturers:

- a. Hohmann & Barnard, Inc; Mighty-Flash Stainless Flashing: www.h-b.com/#sle
- b. WIRE-BOND; _____: www.wirebond.com/#sle
- c. York Manufacturing, Inc; Multi-Flash SS: www.yorkmfg.com/#sle

D. Stainless Steel/Polymer Fabric Drainage Plane Flashing: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded between one sheet of polymer fabric and one sheet of non-woven drainage material

1. Manufacturers:

- a. STS Coatings, Inc;: www.stscoatings.com/#sle
- b. York Manufacturing, Inc; Flash-Vent SS: www.yorkmfg.com/#sle
- c. Substitutions: See Section 01 6000 - Product Requirements

E. Stainless Steel/Polymer Fabric Drainage Plane Flashing - Self-Adhering: ASTM A240/A240M; 2 mil type 304 stainless steel sheet with co-polymer butyl adhesive and a removable release liner on one side and a sheet of nonwoven drainage material bonded to the other side

1. Manufacturers:

- a. York Manufacturing, Inc; Flash-Vent SA: www.yorkmfg.com/#sle.
- b. Substitutions: See Section 01 6000 - Product Requirements

F. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used:

1. Manufacturers, Synthetic Rubber Products:

- a. Mortar Net Solutions; BTL-1 Butyl Sealant: www.mortarnet.com/#sle.
- b. Substitutions: See Section 01 6000 - Product Requirements

2. Manufacturers, Modified Polyether Products

- a. Mortar Net Solutions; _____: www.mortarnet.com/#sle.
- b. York Manufacturing, Inc; UniverSeal US-100 Liquid
- c. Substitutions: See Section 01 6000 - Product Requirements

G. Termination Bars: Stainless steel; compatible with membrane and adhesives

1. Manufacturers

- a. Mortar Net Solutions; Termination Bars: www.mortarnet.com/#sle.
- b. Substitutions: See Section 01 6000 - Product Requirements

- H. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives

3.07 REINFORCED UNIT MASONRY

- A. Placing Reinforcement: Comply with requirements in TMS 602/ACI 530.1/ASCE 6.
- B. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout.
- C. t pressure.
 - 1. Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 - 2. Limit height of vertical grout pours to not more than 60 inches.

3.08 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements is done at Contractor's expense.
- B. Inspections: Special inspections in accordance with Level 2 in TMS 402/ACI 530/ASCE 5.
 - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
 - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
 - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Frequency: One set of tests for each 5000 sq. ft. (464 sq. m) of wall area or portion thereof.
- D. Concrete Masonry Unit Test: For each type of unit provided, in accordance with ASTM C140 for compressive strength.
- E. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, in accordance with ASTM C780.
- F. Mortar Test (Property Specification): For each mix provided, in accordance with ASTM C780. Test mortar for compressive strength.
- G. Grout Test (Compressive Strength): For each mix provided, in accordance with ASTM C1019.
- H. Prism Test: For each type of construction provided, in accordance with ASTM C1314 at seven days and at 28 days.

3.09 PARGING

- A. Parge exterior faces of below-grade masonry walls, where indicated, in two uniform coats to a total thickness of 3/4 inch (19 mm). Dampen wall before applying first coat, and scarify first coat to ensure full bond to subsequent coat.

- B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot (3 mm per 300 mm). Form a wash at top of parging and a cove at bottom.
- C. Strike top edge of parging at 45 degrees
- D. Damp-cure parging for at least 24 hours and protect parging until cured.

3.010 REPAIRING, POINTING, AND CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
 - 2. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.011 MASONRY WASTE DISPOSAL

- A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
- B. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.
- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION

**SECTION 04 4313
STONE MASONRY VENEER**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Adhered cut stone veneer at exterior walls.
- B. Accessories for adhered veneer.
- C. Setting mortar.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Joint reinforcement, Ties, Anchors, and Through-wall flashing.
- B. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.
- C. Section 07 9200 - Joint Sealants: Sealing joints indicated to be left open for sealant.
- D. Section 09 2236 - Lath: Lathing and accessories for scratch coat.

1.03 REFERENCE STANDARDS

- A. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2024.
- B. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster; 2024.
- C. ASTM C1242 - Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems; 2022a.
- D. ASTM C1528/C1528M - Standard Guide for Selection of Dimension Stone; 2020.
- E. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.04 ADMINISTRATIVE REQUIREMENTS

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

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on stone units, mortar, and reinforcement.
- C. Samples: Submit two stone samples illustrating minimum and maximum stone sizes, color range, texture, and markings.
- D. Samples: Submit mortar color samples.

1.06 QUALITY ASSURANCE

- A. Stone Fabricator Qualifications: Company specializing in fabricating cut stone with minimum ten years of documented experience.

1.07 MOCK-UP

- A. Construct stone wall mock-up, 3 feet long by feet5 wide; include stone anchor accessories, corner condition, and typical control joint in mock-up.
- B. See Section 01 4000 - Quality Requirements for additional requirements.
- C. Locate where directed.
- D. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect stone from discoloration during storage on site.
- B. Provide ventilation to prevent condensation from forming on stone.

1.09 FIELD CONDITIONS

- A. Cold Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.
- B. Maintain materials and ambient air at minimum of 40 degrees F (5 degrees C) prior to, during, and for 48 hours after completion of work.

PART 2 PRODUCTS

2.01 STONE

- A. Stone, General: See recommendations in ASTM C1528/C1528M.
- B. SandStone: 85% Bedface, 15% Splitface
 - 1. Acceptable Producers:
 - a. Fond Du Lac Natural Stone
 - 2. Product: Juneau Ledge
 - 3. Color: Biege. Black, Brown, Buff, Charcoal, Gray-Grey, Tan
 - 4. Surface Finish:
 - 5. Pattern: 2:1 Dimensional Ashlar
 - 6. No Substitutions

2.02 MORTAR APPLICATIONS

- A. Scratch Coat Mortars: Scratch coat mortars for application directly to metal lath.
- B. Setting Bed Mortars: Setting bed used to adhere stone veneer units to scratch coat mortar or to bondable concrete or concrete masonry.

2.03 MORTAR MIXES

2.04 ACCESSORIES - ADHERED VENEER

- A. Lath: See Section 09 2236.
- B. Water-Resistive Barrier: See Section 07 2500.
- C. Flashings: See Section 04 2000.
- D. Cleaning Solution: Type that will not harm stone, joint materials, or adjacent surfaces.

2.05 STONE FABRICATION - ADHERED VENEER

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that support work and site conditions are ready to receive work of this section.

3.02 PREPARATION - ADHERED VENEER

- A. Dampen masonry surfaces to reduce excessive suction.

3.03 INSTALLATION - ANCHORED VENEER

- A. Size stone units to fit opening dimensions and perimeter conditions.
- B. Arrange stone pattern to provide color uniformity and minimize visual variations , and provide a uniform blend of stone unit sizes.
- C. Arrange stone coursing in ashlar bond with consistent joint width.
- D. Set stone in full mortar setting bed to fully support stone over bearing surface. Use setting buttons or shims to maintain correct joint width.

3.04 INSTALLATION - WATER-RESISTIVE BARRIER

- A. Where required by thin stone veneer fabricator's instructions or by local codes, install two layers of water-resistive barrier in accordance with water-resistive barrier manufacturer's instructions. Integrate water-resistive barrier with all flashing accessories, adjacent water-resistive barriers, doors, windows, penetrations, and cladding transitions.
- B. Apply water-resistive barrier horizontally with upper layer lapped over lower layer minimum 2 inches.
- C. Lap water-resistive barrier minimum 6 inches at vertical joints.

3.05 INSTALLATION - RAINSCREEN DRAINAGE MATERIAL

- A. Install rainscreen drainage material and metal lath with accessories over sheathing material and water-resistive barrier with fastening system in accordance with ASTM C1063 into wood or metal studs. Install drainage material with filter fabric mortar screen to exterior.

3.06 INSTALLATION - SCRATCH COAT

- A. Apply mortar scratch coat of 1/2 inch nominal to cover metal lath in accordance with ASTM C926. Scratch surface when somewhat firm. If scratch coat dries before applying setting bed mortar and thin stone veneer, moisten scratch coat by misting it with water.

3.07 INSTALLATION - ADHERED VENEER

- A. Install thin stone veneer with a cementitious mortar setting bed to a scratch coat backing surface, in accordance with stone fabricator's instructions and applicable sections of the ICC (IBC), TMS 402/602 and ASTM C1242 that apply to adhered masonry veneer.
- B. Mortar Joints: Extruded.
 - 1. Style: Tight fit joints.
- C. Pattern Bond:
 - 1. Lay out work in advance and distribute color range of stone uniformly over total work area.
 - 2. Lay stone with face exposed.
 - 3. Take care to avoid concentration of any one color to any one wall surface.
 - 4. Do not use stacked vertical joints.
- D. Windows, Doors and Wall Openings: Extend field stone units to edges of wall openings.

3.08 TOLERANCES

- A. Maximum Variation from Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- B. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.

3.09 CLEANING

- A. Remove excess mortar as work progresses, and upon completion of work.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.10 PROTECTION

- A. During temporary storage on site, at the end of working day, and during rainy weather, cover stone work exposed to weather with non-staining waterproof coverings, securely anchored.

END OF SECTION

SECTION 05 1200
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural steel framing members.
- B. Anchor bolts and setting templates for structural steel.
- C. Grouting under base plates.

1.02 RELATED REQUIREMENTS

- A. Section 03 10 00 - Concrete Forms and Accessories: Placement of Anchor Bolts & Embeds.
- B. Section 06 1000 - Rough Carpentry: Wood framing interfacing with steel framing.
- C. Section 06 1800 - Glue-Laminated Construction: Wood beams that frame into steel columns.

1.03 REFERENCE STANDARDS

- A. AISC (MAN) - Steel Construction Manual; 2017.
- B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2016.
- C. AISC S303 - Code of Standard Practice for Steel Buildings and Bridges, American Institute of Steel Construction, Inc.; latest edition, Chapter 10 (Architecturally Exposed Structural Steel).
- D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2020.
- F. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- G. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- H. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.
- I. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts; 2021a.
- J. ASTM A563M - Standard Specification for Carbon and Alloy Steel Nuts (Metric); 2021a.
- K. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2020.
- L. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2021.
- M. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2019.
- N. ASTM F436 - Standard Specification for Hardened Steel Washers; 2011.
- O. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.
- P. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2021.
- Q. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- R. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2021).
- S. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.

- T. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2020.
- U. OSSC - Oregon Structural Specialty Code; current edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, fasteners, and finish.
 - 2. Connections not detailed.
 - 3. Indicate cambers.
 - 4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
 - 5. Indicate locations, critical dimensions, required clearances, construction details, installation methods including any splices, attachments and anchors. Show holes, threaded fasteners, and welds.
 - 6. Indicate which members are considered as Architecturally Exposed Structural Steel.
 - 7. Indicate members to be galvanized, location and size of drain holes, and which members are to receive field finish painting that may impact the galvanizing process.
 - 8. Indicate portions of members not to be painted due to member receiving fire proofing, in contact with concrete, or connected with slip critical-bolts.
- C. Material Samples:
 - 1. Submit sample of all required welds. Approved sample will be used as the standard for all welding.
 - 2. Submit one sample of hot-dipped galvanized finish on a fully welded assembly.
 - a. Intent is to approve quality of finish at steel of Entry Canopy as well as exposed structural steel supports along roof edge.
- D. Mill Test Reports: Indicate structural strength, destructive test analysis and non-destructive test analysis.
- E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.

1.05 QUALITY ASSURANCE

- A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."
- B. Fabricator: Company specializing in performing the work of this section with minimum five years of successful documented experience.
- C. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Recycled Content: Steel W, T, HSS, Pipe, Angles, Plates, Channels, and Bars are to meet or exceed the industry standards for recycled content for the electric arc furnace process. Post-consumer content of 56%, Pre-consumer content of 32%.
- B. Steel Angles, Plates, Channels, and Bars: ASTM A36/A36M unless otherwise indicated on Drawings.
- C. Steel W Shapes and Tees: ASTM A992/A992M (Fy = 50 ksi).
- D. Cold-Formed Structural Tubing and Hollow Structural Sections: ASTM A500, Grade B.
- E. Pipe: ASTM A53/A53M, Grade B, Finish black. Sulfur not exceeding 0.05%, (Fy=35 ksi). Type S where exposed to view, type E where concealed from view.
- F. Steel Tie Rods: ASTM A 572, Grade 50, (Fy=50 ksi).

- G. Structural Bolts and Nuts: Carbon steel, ASTM A307, Grade A and galvanized in compliance with ASTM A153/A153M, Class C.
- H. High-Strength Structural Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, with matching compatible ASTM A563 or ASTM A563M nuts and ASTM F436/F436M washers.
- I. Unheaded Anchor Rods and Bolts: ASTM F1554, Grade 36, plain, heavy hex head, with matching ASTM A563 or A 563M nuts and ASTM F436 Type 1 washers, unless otherwise noted.
- J. Threaded Studs: Fusion welded, Nelson CPL type, size as noted on Drawings, length as required for full engagement of nut with washer. Stainless steel 18-8 threaded studs where noted on Drawings for connection to stainless steel material.
- K. Welding Materials: AWS D1.1; type required for materials and conditions being welded.
 - 1. E70 Low Hydrogen Electrodes.
 - 2. E60 for light gage metal studs and metal decking.
- L. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch (13.7 MPa).
 - 2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch (48 MPa).
 - 3. Products:
 - a. "Euco N.S." manufactured by Euclid Chemical Co.
 - b. "Crystex" manufactured by L&M Construction Chemicals.
 - c. "Masterflow 713" by Master Builders
- M. Shop and Touch-Up Primer: Fabricator's standard, complying with project's VOC limitations.
- N. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, complying with project's VOC limitations.

2.02 FABRICATION

- A. Shop fabricate to greatest extent possible.
- B. Continuously seal joined members by continuous welds. Grind exposed welds smooth.
- C. Fabricate connections for bolt, nut, and washer connectors. Hole size 1/16 inch larger than bolt diameter unless shown otherwise, 1/8 inch larger than bolt at base plates.

2.03 FINISH

- A. Prepare structural component surfaces in accordance with SSPC SP-6.
- B. Shop prime structural steel members. Do not prime surfaces that will be field welded, in contact with concrete, or high strength bolted.
- C. Where indicated, galvanize steel members to comply with ASTM A123/A123M. Provide minimum 1.7 oz/sq ft galvanized coating. Provide vent holes in closed shapes. Clip end plates, tab plates, and other features to prevent accumulation or pooling of galvanized material.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 ERECTION

- A. Erect structural steel in compliance with AISC 303.
- B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Field weld components and shear studs indicated on shop drawings.

- D. Use carbon steel bolts only for temporary bracing during construction, unless otherwise specifically permitted on drawings. Install high-strength bolts in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".
- E. Do not field cut or alter structural members without approval of Architect.
- F. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- G. Treat field welded areas of galvanized members with zinc solder to replace galvanized protection.
- H. Touch-up Field Connections and damaged Shop Treatment areas as erection proceeds. Immediately prior to final covering, remove Rust and retreat any Members showing evidence of Rust through Shop Treatment over approximately 5% or more to total Shop Treatment area.
- I. Remove loose rust, heavy Mill Scale, Oil, Dirt, and other bond-reducing Foreign Substances from Members scheduled to receive Finish Painting, or other direct-to-steel Coatings.
- J. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch (6 mm).

3.04 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- B. An independent testing agency will perform special inspection, as specified in Section 01400 for structural welding in accordance with OSSC 1705.2.

END OF SECTION

**SECTION 06 1000
ROUGH CARPENTRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural dimension lumber framing.
- B. Rough opening framing for doors, windows, and roof openings.
- C. Sheathing.
- D. Subflooring.
- E. Roof-mounted curbs.
- F. Roofing nailers.
- G. Manufactured lumber.
- H. Preservative treated wood materials.
- I. Miscellaneous framing and sheathing.
- J. Mounting boards.
- K. Concealed wood blocking, nailers, and supports.
- L. Anchor Bolts and embeds for Rough Carpentry.

1.02 RELATED REQUIREMENTS

- A. Section 06 1733 - Wood I-Joists.
- B. Section 06 1800 - Glued-Laminated Construction.
- C. Section 06 2000 - Finish Carpentry
- D. Section 07 2500 - Weather Barriers: Air barrier over sheathing.
- E. Section 09 2116 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

- A. AFPA (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2012.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
- D. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).
- E. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2019a.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.
- G. AWWA U1 - Use Category System: User Specification for Treated Wood; 2018.
- H. OSSC - Oregon Structural Specialty Code; latest edition.
- I. PS 1 - Structural Plywood; 2009 (Revised 2019).
- J. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; 2010.
- K. PS 20 - American Softwood Lumber Standard; 2020.
- L. WWP A G-5 - Western Lumber Grading Rules; 2017.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials.

- C. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.06 OPTIONS

- A. Contractors may, at their option, substitute:
 - 1. Power-driven Fasteners in lieu of Anchor Bolts at Interior Non-Structural Stud Wall Base Plates as follows:
 - a. Manufacturer and Type: Hilti DN 72, NK72 or approved.
 - b. Maximum spacing at Non-load Bearing Walls: 24 inches, 6 inches minimum, 12 inches maximum from ends.

1.07 WARRANTY

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

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Provide wood harvested and milled within 500 miles of the project site.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: Western Wood Products Association; WWPA G-5.
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Moisture Content: S-dry or MC19.
- D. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
 - 1. Species and Grade: As indicated on Structural Drawings.
- E. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):
 - 1. Species and Grade: As indicated on Structural Drawings.
- F. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.
 - 3. Species and Grade: As indicated on Structural Drawings.

2.03 STRUCTURAL COMPOSITE LUMBER

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers with approval from Architect/Engineer.
- B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.
- C. Manufacturers:
 - 1. Weyerhaeuser Company: www.weyerhaeuser.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- D. Laminated Veneer Lumber "LVL"
 - 1. Material: ICBO approved.

- a. Modulus of Elasticity (E): 1,800,000 psi.
 - b. Flexural Stress (Fb): 2400 psi.
 - c. Compression Perpendicular to Grain, Parallel to Glue Line (Fc): 750 psi.
 - d. Compression Parallel to Grain (Fc): 3,000 psi.
 - e. Horizontal Shear (Fv): 285 psi.
 - 2. Model: Similar to "1 3/4" 2.0E WS Micro-Lam LVL" by Trus Joist/Weyerhaeuser.
 - 3. Fabrication: In accordance with CABO Report No. NER-126.
 - 4. Size: As shown on drawings and to meet load and span conditions.
- E. Laminated Strand Lumber "LSL"
- 1. Material:
 - a. Modulus of Elasticity (E): 1,550,000 psi.
 - b. Flexural Stress (Fb): 2325 psi.
 - c. Compression Perpendicular to Grain (Fc): 900 psi.
 - d. Compression Parallel to Grain (Fc): 2170 psi.
 - e. Horizontal Shear (Fv): 310 psi.
 - 2. Model: Similar to "Timberstrand LSL 1.55E" by Trus Joist/Weyerhaeuser.
 - 3. Fabrication: In accordance with CABO Report No. NER-126.
 - 4. Size: As shown on drawings and to meet load and span conditions.
- F. Parallel Strand Lumber "PSL"
- 1. Material:
 - a. Modulus of Elasticity (E): 2,000,000 psi.
 - b. Flexural Stress (Fb): 2900 psi.
 - c. Compression Perpendicular to Grain (Fc): 625 psi.
 - d. Compression Parallel to Grain (Fc): 2900 psi.
 - e. Horizontal Shear (Fv): 290 psi.
 - 2. Model: Similar to "Parallam" by Trus Joist/Weyerhaeuser.
 - 3. Fabrication: In accordance with CABO Report No. NER-126.
 - 4. Size: As shown on drawings and to meet load and span conditions.

2.04 CONSTRUCTION PANELS

- A. Mechanical Mezzanine Floor Sheathing: PS 2 type, rated Single Floor.
 - 1. Bond Classification: Exterior.
 - 2. Span Rating: 48.
 - 3. Performance Category: 1-1/8 PERF CAT.
 - 4. Thickness: 1-1/8 inches (32 mm), nominal.
 - 5. Panel Size: 48 x 96 inches.
 - 6. Edges: Tongue and groove.
- B. Underlayment: APA Underlayment; plywood, Exposure 2, 1/2 inch (12.5 mm) thick. Fully sanded faces at resilient flooring.
- C. Roof Sheathing: See Structural Drawings.
- D. Wall Sheathing: See Structural Drawings.
- E. Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch (19 mm) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.05 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Machine Bolts, Nuts, Washers, and Screws: Conforming to ASTM A307, galvanized where exposed.

3. Lag Bolts and Wood Screws: ANSI/ASME B18.6.1-1981, zinc plated.
 4. Threaded Rods: ASTM A36 or ASTM A307.
 5. Anchor Bolts: ASTM A 307, Grade C.
 6. Washers: Provide Hot-dip Galvanized Steel Washers under Bolt Heads, Lag Heads, and Nuts adjacent to all wood framing members.
 7. Epoxy Anchors: Hilti HIT HY-150 Max (at CMU); Hilti HIT-RE 500 SD (at concrete), or approved.
 8. Powder Actuated Fasteners:
 - a. To Steel: "DS with Washer", by Hilti, "Power Point with Washer", by Ramset/Redhead, or approved.
 - b. To Concrete (non-seismic applications only): "DN72 with Washer", by Hilti, or approved.
 - c. To Concrete Masonry (non-seismic applications only): "DXE72 with Washer", by Hilti, or approved.
 9. Self-drilling screws of wood-to-wood connections: Simpson SDS series or approved.
 10. Self-drilling screws to light-gage framing: Traxx by ITW Buildex or approved; with break-off wings, flat or bugle head.
- B. Framing Connectors: Zinc-coated steel; Simpson, or approved. Connector model numbers shown on Drawings are taken from Simpson Catalog. If specific type is not shown on Drawings, use type recommended by Manufacturer for conditions of installation.
- C. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing complying with ASTM A653/A653M.
- D. Sill Gasket on Top of Foundation Wall: 1/4 inch (6 mm) thick, plate width, closed cell plastic foam from continuous rolls.
- E. Subfloor Adhesives: Waterproof, air cure type, cartridge dispensed; adhesives designed for subfloor applications and complying with either ASTM C557 or ASTM D3498.

2.06 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.

PART 3 EXECUTION

3.01 PREPARATION

- A. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.
- B. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.
- E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed. Space to provide clearance for pipes in partitions.
- G. Provide bridging at joists in excess of 8 feet (2.3 m) span as detailed. Do not anchor until Dead Loads are in place. Space bridging members 1/4 inch apart to avoid members rubbing against each other. Fit solid blocking at ends of members.
- H. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.
- I. Do not notch, bore, or drill framing members except as noted on Drawings, or as approved by Engineer.
- J. Do not install composite lumber in contact with concrete. Provide treated dimension lumber for plates in contact with foundations.
- K. Provide preservative-treated wood nailers on roof deck as indicated on Drawings or as required by membrane roofing manufacturer.
 - 1. Coordinate thickness of nailer with thickness of roof insulation.

3.04 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

3.05 ROOF-RELATED CARPENTRY

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

3.06 INSTALLATION OF CONSTRUCTION PANELS

- A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.
- B. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing. See Structural Drawings.
 - 1. At long edges provide solid blocking where joints occur between roof framing members and as indicated in the Structural Drawings. .
 - 2. Nail panels to framing; staples are not permitted.
- C. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using fasteners as indicated on Drawings.
 - 1. Block unsupported edges at shearwalls as shown on Drawings.
 - 2. Drive sheathing fasteners flush with panel face, do not overdrive.

- D. Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches (610 mm) on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.
 - 4. Size and Location: As indicated on drawings.
- E. Install panels with a minimum 1/16 inch, maximum 1/8 inch gap between adjoining panels.

3.07 ACCESSORIES AND FASTENER INSTALLATION

- A. Provide Framing Connectors where indicated; secure with fasteners recommended by manufacturer to achieve maximum load capacity.
- B. Provide Washers under Nuts and Heads when making Bolted or Lag Screwed connections.
- C. Drive Nails perpendicular to Grain in lieu of toe-nailing where feasible.
- D. Lag Screws: Pre-drill to 70% of the shank diameter in supporting member, 1/32 to 1/16 inch larger than shank diameter in attached members. Use standard cut washer between bolt head and wood. Install Lag Screws by turning, do not drive with hammer.
- E. Nails and Screws: Fasten members as shown on Drawings. Predrill holes as required to prevent splitting of members. Nailed connections not shown on Drawings or specified by manufacturer shall conform to the building code.
- F. Bolts: Set in holes 1/32 inch to 1/16 inch larger than bolt through wood member. Tighten to snug position. Use cut washer between nut or bolt head and wood.
- G. Powder-Driven Connectors: Select size and type for full penetration into substrate without splitting connected wood members or fracturing substrate. Use washer under head to prevent over-driving.

3.08 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.09 TOLERANCES

- A. Framing Members: 1/4 inch (6 mm) from true position, maximum.
- B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

END OF SECTION

SECTION 06 1516
WOOD ROOF DECKING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes solid-sawn wood roof decking

1.02 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.03 INFORMATIONAL SUBMITTALS

- A. Research/Evaluation Reports: For glued-laminated wood roof decking indicated to be of diaphragm design and construction, from ICC-ES.

PART 2 - PRODUCTS

2.01 WOOD ROOF DECKING, GENERAL

- A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.

2.02 SOLID-SAWN WOOD ROOF DECKING

- A. Standard for Solid-Sawn Wood Roof Decking: Comply with AITC 112.
- B. Roof Decking Species: Douglas fir-larch
- C. Roof Decking Nominal Size: 2 by 6 or 3 by 6 as indicated in plans.
- D. Roof Decking Grade: Select Decking or Select Dex.
- E. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that are not exposed to view.
- F. Moisture Content: Provide wood roof decking with 19 percent maximum moisture content at time of dressing.
- G. Face Surface: Smooth.
- H. Edge Pattern: Vee grooved.

2.03 ACCESSORY MATERIALS

- A. Fastener Material: Hot-dip galvanized steel.
- B. Sealants: Latex, complying with applicable requirements in Section 079200 "Joint Sealants" and recommended by sealant manufacturer and manufacturer of substrates for intended application.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install solid-sawn wood roof decking to comply with AITC 112.
 - 1. Locate end joints for combination simple and two-span continuous lay-up
 - 2. Fasten each course of wood roof decking at each support with two fasteners straight through the face.
 - a. Use 16d nails for 2-by-6 and 2-by-8 roof decking.
 - b. Use Simpson SDWS500DB screws for 3-by-6 and 3-by-8 roof decking

3.02 PROTECTION

- A. Provide water-resistive barrier over roof decking as the Work progresses to protect roof decking until roofing is applied.

END OF SECTION

SECTION 06 1733
WOOD I-JOISTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood I-joists for roof and floor framing.
- B. Bridging, bracing, and anchorage.
- C. Framing for openings.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Installation requirements for miscellaneous framing.

1.03 REFERENCE STANDARDS

- A. ASTM D5055 - Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists; 2019, with Editorial Revision (2020).
- B. PS 1 - Structural Plywood; 2009 (Revised 2019).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's literature describing materials, dimensions, allowable spans and spacings, bearing and anchor details, bridging and bracing requirements, and installation instructions; identify independent inspection agency.
- C. Shop Drawings: Indicate sizes and spacing of joists, bracing and bridging, bearing stiffeners, holes to be cut (if any), and framed openings between joists.
- D. Certificate: Certification by joist manufacturer that products delivered are of the same design and construction as those evaluated by the independent inspection agency.

1.05 QUALITY ASSURANCE

1.06 SUBSTITUTIONS

- A. To be eligible for Substitution Approval, Alternate Systems from that specified must maintain same overall depth, and provide equally simple installation methods and application of adjacent materials to Chord Members.
- B. In accordance with Section 01 6000, Accompany Requests For Substitution approval with complete data on Metal Connectors and other Hardware Items, as well as Affidavit, bearing Oregon Seal of Registered Structural Engineer, that proposed System conforms with Design Requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in manufacturer's original packaging with manufacturer's name and product identification intact and legible.
- B. Protect products from damage due to weather and breakage.
- C. Protect joists from warping or other distortion by stacking in upright position, braced to resist movement, with air circulation under coverings and around stacks.
- D. Handle individual joists in the upright position.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood I-Joists:
 - 1. Project is designed around the BCI/Boise Cascade Western product line.
 - 2. The following manufacturers are approved provided that they can provide the specified plywood web joists with the same span and load carrying requirements at the same depth as shown on drawings:
 - a. Louisiana-Pacific Corporation: www.lpcorp.com.

- b. Weyerhaeuser Company: www.weyerhaeuser.com.
- c. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MATERIALS

- A. Wood I-Joists: Laminated veneer lumber top and bottom flanges and plywood webs bonded together with structural adhesive, with published span rating to meet project requirements.
 - 1. Span Rating: Established and monitored in accordance with ASTM D5055 by independent inspection agency.
 - 2. Plywood/OSB: Comply with PS 1.
 - 3. Adhesive: Tested for wet/exterior service in accordance with ASTM D2559.
 - 4. Depth: As indicated on drawings.
 - 5. Fabrication Tolerances:
 - a. Flange Width: Plus/minus 1/32 inch (0.8 mm).
 - b. Flange Thickness: Minus 1/16 inch (1.6 mm).
 - c. Joist Depth: Plus 0, minus 1/8 inch (3.2 mm).
 - 6. Marking: Mark each piece with depth, joist spacing, and allowable span for joist spacing.
 - 7. Provide bearing stiffeners if required by span rating or joist hanger manufacturer.
- B. Wood-Based Components:
 - 1. Wood fabricated from old growth timber is not permitted.
- C. Joist Hangers: Simpson Strong-Tie, or approved..
- D. Joist Bridging: Type, size and spacing recommended by joist manufacturer.
- E. Wood Blocking, Plates, and Miscellaneous Framing: Softwood lumber, Douglas fir, construction grade, maximum moisture content of 19 percent. Provide as shown on drawings and required for complete installation of I-Joists.
- F. Fasteners: Electrogalvanized steel, type to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that supports and openings are ready to receive joists.

3.02 PREPARATION

- A. Coordinate placement of bearing items.

3.03 ERECTION

- A. Install joists in accordance with manufacturer's instructions.
- B. Set structural members level and plumb, in correct position.
- C. Make provisions for erection loads and for sufficient temporary bracing to maintain structure plumb and in true alignment until completion of erection and installation of permanent bracing.
- D. Do not field cut or alter structural members without approval of Architect.
- E. Install permanent bridging and bracing.
- F. Install headers and supports to frame openings required.
- G. Frame openings between joists with lumber in accordance with Section 06 1000.
- H. Provide necessary Blocking, Bridging, Bearing Plates, Web Stiffeners, End, Supports, Anchoring Clips, Fasteners, and Bracing required for a complete installation.

3.04 TOLERANCES

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

END OF SECTION

SECTION 06 17 53
SHOP FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. Wood roof trusses.

1.02 ALLOWANCES

- A. Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Section 012100 "Allowances."

1.03 ACTION SUBMITTALS

- A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.
- B. Shop Drawings: Show fabrication and installation details for trusses.
 - 1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
 - 2. Indicate sizes, stress grades, and species of lumber.
 - 3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
 - 4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
 - 5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
 - 6. Show splice details and bearing details.
- C. Delegated-Design Submittal: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.04 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Metal-plate connectors.
 - 2. Metal truss accessories.

1.05 QUALITY ASSURANCE

- A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
 - 1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
 - 2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1, and involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.
- B. Structural Performance: Metal-plate-connected wood trusses shall be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1.
- C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.
- D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."

2.02 DIMENSION LUMBER

- A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Provide dry lumber with 19 percent maximum moisture content at time of dressing.
- B. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

2.03 METAL CONNECTOR PLATES

- A. Fabricate connector plates to comply with TPI 1.
- B. Hot-Dip Galvanized-Steel Sheet: ASTM A653/A653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.

2.04 FASTENERS

- A. Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
 - 2. Where trusses are exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
- B. Nails, Brads, and Staples: ASTM F1667.

2.05 METAL FRAMING ANCHORS AND ACCESSORIES

- A. Allowable design loads, as published by manufacturer, shall comply with or exceed those Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 (Z180) coating designation.

2.06 FABRICATION

- A. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
 - 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.
- B. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install wood trusses only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.
- F. Securely connect each truss ply required for forming built-up girder trusses.
- G. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
 - 1. Install bracing to comply with Section 061000 "Rough Carpentry".
 - 2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.
- H. Install wood trusses within installation tolerances in TPI 1.
- I. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
- J. Replace wood trusses that are damaged or do not comply with requirements.

END OF SECTION

SECTION 06 1800
GLUED-LAMINATED CONSTRUCTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glue laminated wood beams, purlins, and columns.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. AITC A190.1 - American National Standard for Wood Products - Structural Glued Laminated Timber; 2007.
- B. ASTM D2559 - Standard Specification for Adhesives for Bonded Structural Wood Products for Use Under Exterior Exposure Conditions; 2012a (Reapproved 2018).
- C. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber; 2019.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate framing member grade, sizes, lengths, and cambers.
- C. AITC Certificate of Conformance with attachments 1 and 2, stating that glued-laminated units conform to these specifications.

1.05 QUALITY ASSURANCE

- A. Manufacturer/Fabricator Qualifications: Company specializing in manufacture of glue laminated structural units with three years of documented experience, and certified by AITC in accordance with AITC A190.1.

PART 2 PRODUCTS

2.01 GLUED-LAMINATED UNITS

- A. Glued-Laminated Units: Fabricate in accordance with AITC 117 Industrial and Architectural.
 - 1. Verify dimensions and site conditions prior to fabrication.
 - 2. Cut and fit members accurately to length to achieve tight joint fit.
 - 3. Fabricate member with camber built in.
 - 4. Do not splice or join members in locations other than those indicated without permission.
 - 5. After end trimming, seal with penetrating sealer in accordance with AITC requirements.

2.02 MATERIALS

- A. Lumber: Softwood lumber complying with RIS (GR) grading rules with 12 percent maximum moisture content before fabrication. Design for the following values:
 - 1. Beam Grade: As indicated on Drawings
 - a. At Beams: As indicated on Drawings.
 - b. Structural units shall meet the requirements of 24F-V4 for simply supported beams, and 24F-V8 for beams continuous across supports or cantilevered. All DF/DF.
 - 2. Column Grade: as indicated in drawings.
- B. Laminating Adhesive: Tested for wet/exterior service in accordance with ASTM D 2559.

2.03 FABRICATION

- A. Fabricate glue laminated structural members in accordance with AITC Industrial and Premium grade.
- B. Cut and fit members accurately to length to achieve tight joint fit.
- C. Fabricate member with camber built in.
- D. Do not splice or join members in locations other than those indicated without permission.
- E. After end trimming, seal with penetrating sealer in accordance with AITC requirements.

- F. Affix AITC Stamp of Specification Conformance on each member.
- G. Appearance:
 - 1. At Beams and columns:
 - a. AITC Industrial Grade where concealed from view.
 - 2. At exposed beam and columns
 - a. AITC Architectural Grade where glulam is exposed to view.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that supports are ready to receive units.

3.02 PREPARATION

- A. Coordinate placement of bearing items.

3.03 ERECTION

- A. Lift members using protective straps to prevent visible damage.
- B. Set structural members level and plumb, in correct positions or sloped where indicated.

3.04 TOLERANCES

- A. Framing Members: 1/2 inch (12 mm) maximum from true position.

END OF SECTION

SECTION 06 2000 FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior and exterior finish carpentry items, including running trim and panel material.
- B. Wood casings and moldings.
- C. Wood Tree
- D. Wood Seating Bench
- E. Wood Sills
- F. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 06 4100 - Architectural Wood Casework: Shop fabricated custom cabinet work.
- D. Section 06 4200 - Wood Paneling: Shop fabricated custom paneling.
- E. Section 08 1416 - Flush Wood Doors.
- F. Section 08 5200 - Wood Windows.
- G. 09 9000 Painting and Coating: Painting of finish carpentry items
- H. Section 09 9123 - Interior Painting: Painting of finish carpentry items.
- I. Section 09 9300 - Staining and Transparent Finishing: Staining and transparent finishing of finish carpentry items.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- D. PS 1 - Structural Plywood; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.
- B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide instructions for attachment hardware and finish hardware.
- C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

- D. Samples: Submit two samples of finish plywood, 12x12 inch in size illustrating wood grain and specified finish.
- E. Samples: Submit two samples of wood trim 12 inch long.
- F. Samples: Submit two samples of each type of wood panel 12 inches square with specified finish

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
- B. Recycled Content of Medium-Density Fiberboard and Particleboard: Provide products with an average recycled content so Postconsumer recycled content plus one-half of preconsumer recycled content is not less than 20 percent.
- C. Formaldehyde Free Panel Products: Provide fiberboard, particleboard and plywood products made with binders and adhesives containing no urea formaldehyde.

1.07 MOCK-UPS

- A. Wood Tree
 - 1.
 - 2. Locate where directed.
 - 3. Mock-up may remain as part of the Work.
- B. Wood Seating Bench
 - 1.
 - 2. Locate where directed.
 - 3. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect from moisture damage.
- B. Protect material from discoloration due to uneven exposure to light.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.

2.02 LUMBER MATERIALS

- A. Interior Hardwood Trim: White Maple species; PS 20, AWI Premium Grade; plain sawn, smooth texture; mixed grain; maximum moisture content of 6 percent; suitable for clear finish.
 - 1. Ease exposed edges with 1/16 inch radius, unless otherwise shown.
 - 2. Minimum lengths: Opening & Standing Trim: 1 piece, single length. Running Trim: Joints minimum 12 feet apart.
 - 3. Extent of Work:
- B. Interior Painted Wood Trim: Douglas Fir, Hem-Fir, or Poplar species; PS 20, AWI Custom Grade; smooth sawn, mixed grain; maximum moisture content of 6 percent; suitable for painted finish.
 - 1. Ease exposed edges with 1/16inch radius, unless otherwise shown.
 - 2. Minimum lengths: Opening & Standing Trim: 1 piece, single length. Running Trim: Joints minimum 12 feet apart.
 - 3. Extent of Work: As shown on Drawings, and/or as Scheduled.

- C. Interior Painted Wood Trim: Medium Density Fiberboard (MDF); Industrial Grade engineered wood-based panel, water resistant, manufactured with a formaldehyde-free binder and which meets the requirements of ANSI A208.2-1994, product class MD.
 - 1. Manufacturer and Brand: Medite II, by Sierrapine, or approved.
 - 2. Ease exposed edges with 1/16 inch radius, unless otherwise shown.
 - 3. Minimum lengths: Opening & Standing Trim: 1 piece, single length. Running Trim: Joints minimum 12 feet apart.
 - 4. Extent of Work: As shown on Drawings, and/or as Scheduled.

2.03 SHEET MATERIALS

- A. Medium Density Fiberboard (MDF): Industrial Grade engineered wood-based panel, water resistant, manufactured with a formaldehyde-free binder and which meets the requirements of ANSI A208.2-1994, product class MD-EXTERIOR.
 - 1. Manufacturer and Brand: Medex, by Sierrapine, or approved.
- B. Softwood Plywood, Not Exposed to View: Any face species, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.

2.04 PLASTIC LAMINATE MATERIALS

- A. Laminate Backing Sheet: NEMA LD 3, BKL; undecorated plastic laminate.
- B. Colors: As scheduled.

2.05 FASTENINGS

- A. Fasteners: Of size and type to suit application.
- B. Concealed Joint Fasteners: Threaded steel.

2.06 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
 - 1. Do not use adhesives that contain urea formaldehyde.
 - 2. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Wood Glues: 30 g/L.
- B. Plastic Edge Trim: Extruded flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness; color as selected.
- C. Wood Filler: Solvent base, tinted to match surface finish color.

2.07 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- C. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- D. Apply laminate backing sheet to reverse face of plastic laminate finished surfaces.

2.08 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:

1. Transparent:
 - a. System - 5, Varnish, Conversion.
 - b. Sheen: Satin.
- E. Back prime woodwork items to be field finished, prior to installation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

- A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- D. Miter corners.
- E. Use concealed fasteners wherever possible, unless noted otherwise on Drawings.
- F. At fasteners installed through the exposed surface(s) of the trim, countersink and/or set fasteners low enough to accommodate wood plugs or wood filler.
- G. Ease sharp external corners prior to finishing.

3.03 PREPARATION FOR SITE FINISHING

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations less than 1/4 inch in diameter, and wood plugs in indentations 1/4 inch or greater. Sand work smooth.

3.04 TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

**SECTION 06 4100
ARCHITECTURAL WOOD CASEWORK**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Cabinet Hardware.
- C. Factory finishing.
- D. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 08 8000 - Glazing: Glass for casework.
- D. Section 12 3600 - Countertops.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles and elevations, fastening methods, jointing details, connections to adjacent work, schedule of finishes, and accessories.
- C. Product Data: Provide data for panel products and hardware accessories.
- D. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.
- E. Samples:
 - 1. Submit two samples of each plastic laminate color specified, 4 inch x 5 inch size.
 - 2. Submit two samples of each plastic laminate edge banding, 12 inches long
- F. Resubmit Shop Drawings: If field measurements result in significant changes to the casework design, resubmit all shop drawings after field dimensions have been verified.
 - 1. Indicate on resubmitted drawings all dimensions which were verified.
 - 2. Indicate significant changes to casework resulting from field-measured conditions.Do not proceed with fabrication until approved by Architect.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver casework to jobsite until notified by General Contractor that Project is conditioned and prepared to handle and store casework without damage or discoloration.
- B. Protect units from moisture damage.

1.07 FIELD CONDITIONS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Cabinets:
 - 1. Finish - Exposed Exterior Surfaces: Decorative laminate.
 - 2. Finish - Exposed Interior Surfaces: Decorative laminate.
 - 3. Finish - Semi-Exposed Surfaces: Decorative laminate
 - 4. Finish - Concealed Surfaces: Manufacturer's option.
 - 5. Door and Drawer Front Edge Profiles: Square edge with thin applied band.
 - 6. Casework Construction Type: Type A - Frameless.
 - 7. Casework panel substrate: 3/4 inch Interior MDF or Particleboard.

2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.
- B. Interior Medium Density Fiberboard (MDF): Industrial Grade engineered wood-based panel, water resistant, manufactured with a formaldehyde-free binder and which meets the requirements of ANSI A208.2-1994, product class MD.
 - 1. Manufacturer and Brand: Medite II, by Sierrapine, or approved.
- C. Particle Board: Engineered composite panel wood product made from 100% pre-consumer and reclaimed Ponderosa Pine and species of western wood particles, and no added urea-formaldehyde:
 - 1. Minimum Density 45.0 lb/cu ft
 - 2. Moisture Content: 7%
 - 3. Sanding: 100 grit
 - 4. Surface Strength: 350 psi
 - 5. Manufacturers:
 - a. Boise Cascade "Boise Evergreen".
 - b. Roseburg "Skyblend".
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- D. Hardboard; AHA A135.4; Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.
 - 1. Provide prefinished hardboard for cabinet drawer bottoms.

2.03 LAMINATE MATERIALS

- A. Manufacturers:
 - 1. Formica Corporation; ____: www.formica.com/#sle.
 - 2. Wilsonart LLC: www.wilsonart.com/#sle.
 - 3. Laminart; www.laminart.com
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- C. Provide specific types as indicated.
 - 1. Vertical Surfaces: VGS, 0.028 inch nominal thickness, colors as scheduled, finish as scheduled.
 - 2. Cabinet Liner: CLS, 0.020 inch nominal thickness, colors as scheduled, finish as scheduled.

3. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.04 COUNTERTOPS

- A. Countertops: See Section 12 3600.

2.05 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 1. Wood Glues: 30 g/L.
 2. Contact Adhesive: 250 g/L.
- C. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
 1. Color: to match adjacent plastic laminate color.
 2. Use 3 mm at all exposed edges, doors and drawer fronts, vertical case ends, bottoms and sub-tops.
 3. Use 3 mm at all exposed shelf edges.
- D. Fasteners: Size and type to suit application.
- E. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; chrome-plated finish in concealed locations and stainless steel finish in exposed locations.
- F. Concealed Joint Fasteners: Threaded steel.
- G. Coat Rod and Flanges: Integral, wall mounted, chrome metal finish. "660SS Series" with matching chrome Flanges at each end by Knape & Vogt, or approved.
- H. Door Silencers: Felt or rubber to prevent noisy door to frame contact.
- I. Provide clear rubber cabinet door bumpers at locations where cabinet doors or pulls hit adjacent walls, window sills, or other building elements.

2.06 HARDWARE

- A. Adjustable Shelf Supports: Heavy duty type for nominal 1 inch spacing adjustments.
- B. Drawer and Door Pulls: "U" shaped wire pull, steel with satin finish, 4 inch centers.
- C. Cabinet Locks: Keyed cylinder, two keys per lock, each room different and master keyed, steel with satin finish. Locate where shown on Drawings. Provide with standard or custom-fabricated strike plate to fit the style of casework detailed.
 1. Products:
 - a. National Lock
 - b. Russwin
 - c. Yale
 - d. Olympus
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- D. Drawer Slides:
 1. Type: Full extension.
 2. Static Load Capacity: Heavy Duty grade.
 3. Mounting: Side mounted.
 4. Stops: Integral type.
 5. Features: Provide self closing/stay closed type.
 6. Manufacturers:

- a. Accuride International, Inc; Heavy-Duty Drawer Slides:
www accuride.com/#sle.
 - b. Knap & Vogt Manufacturing Company; Heavy-Duty Drawer Slides:
www.knapandvogt.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- E. Hinges: European style concealed self-closing 170 degree opening angle, steel with satin finish.
 - 1. Manufacturers:
 - a. Julius Blum, Inc: www.blum.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- F. Countertop Supports:
 - 1. Type-1: Hidden Countertop Bracket
 - a. Freedom Hidden Countertop Brackets manufactured by Federal Brace,
www.federalbrace.com
 - b. Verify length suitable for countertop depth
 - c. Color: Black

2.07 FABRICATION

- A. Laminate Finished Surface Definitions: Comply with Requirements of AWI/AWMAC Architectural Woodwork Quality Standards Illustrated and the following:
 - 1. Exposed portions of casework include all surfaces visible when doors and drawers are closed, interior faces of cabinet doors and exposed surfaces of open cases including top and bottom of shelving, interior cabinet surfaces visible behind glass doors.
 - 2. Semi-exposed surfaces of casework include those members behind opaque doors such as shelves, drawers, dividers, interior faces of ends, case backs and back and bottoms.
 - 3. Concealed portions of casework include sleepers, dust panels, and other surfaces not visible after installation.
- B. Drawer construction Technique: Lock shoulder joints.
- C. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- D. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- E. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- F. Construct cabinets without integral base. Provide separate structural base as specified below.
- G. Cabinet backs: Provide minimum 1/2 inch thick cabinet back. Where back of cabinet is exposed to view, provide 3/4 inch plywood with high pressure laminate facing.
- H. Base Construction: Construct cabinet bases of 3/4 inch thick marine grade plywood, glued and screwed. Provide reinforcing blocks as required for maximum strength. Recess base for toe space as indicated. Set base on floor where casework is to be installed. Level top surface and scribe bottom surface to floor line leaving a height of 4 inches between floor and bottom of casework.
- I. Drawers:
 - 1. Fronts: One piece 3/4 inch thick, plywood with 3 mm plastic edge facing on all four sides.
 - 2. Sides: 1/2 inch thick medium density overlay plywood.
 - 3. Back and Sub-Front: 3/4 inch thick plywood.
 - 4. Edge band top edges of sides, back and sub-front.

5. Bottoms: Minimum 1/2 inch plywood or 1/4 inch hardboard set into 1/4 inch deep grooves at front, back and both sides.
 6. Drawer Reinforcement: Reinforce drawer bottoms in excess of 400 square inches in area with 1 inch by 3 inch wood strip running front to back centered on drawer.
 7. Fabricate drawers full depth of cabinet.
 8. Mount drawers with positive in and out stops.
- J. Cabinet Doors: Plastic laminate clad 3/4 inch thick plywood or MDF with 3 mm plastic edge facing on all edges.
1. Provide hinges in the following quantities:
 - a. Two hinges for doors up to 36 inches high, 24 inches wide.
 - b. Three hinges for doors up to 48 inches high, 24 inches wide
 - c. Four hinges for doors up to 82 inches high, 24 inches wide
 - d. For doors in excess of dimensions indicated above, comply with hinge manufacturer's recommendation for size and weight of door.
 2. Surface apply hinges, do not let-in hinges.
- K. Semi-Exposed Cabinet Shelving: Provide plastic laminate clad plywood or MDF as follows:
1. 3/4 inch thick plywood for shelving less than 32 inches wide.
 2. 1 inch thick plywood for shelving more than 32 inches wide.
 3. Provide "Line Bored" multi-hole shelf support holes.
 4. Allow 1/16 inch clearance at each of loose shelving (1/8 inch overall) for ease of moving shelves.
- L. Filler Panels: Provide filler panels covered with matching plastic laminate to fill in all voids between cabinets and walls, including the full depth at underside of upper cabinets.
- M. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises.
1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
 2. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- N. Provide cutouts for plumbing fixtures, other built-in items, appliances, other built-in items, and other built-in items. Verify locations of cutouts from on-site dimensions. Seal cut edges.
- O. All shelves shall be adjustable, unless required to be fixed in place for the stability of the casework, or as otherwise noted on Drawings.
- P. Provide square cut outs in cabinet doors where shown on drawings. Fabricate cut outs with smooth edges slightly eased. Cleanly cut inside corners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- C. Use concealed joint fasteners to align and secure adjoining cabinet units.
- D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

- E. Secure cabinets to floor using appropriate angles and anchorages.
- F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

**SECTION 06 8205
FIBERGLASS REINFORCED PLASTIC PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass reinforced polyester panel system for adhesive mounting.
- B. Moldings, adhesive, and joint sealants.

1.02 RELATED SECTIONS

- A. Section 09 2116 - Gypsum Board Assemblies; Cement backer board substrate for Glass Fiber Reinforced Plastic Panel.

1.03 REFERENCES

- A. ASTM D 256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2005.
- B. ASTM D 523 - Standard Test Method for Specular Gloss; 1989 (Reapproved 1999).
- C. ASTM D 570 - Standard Test Method for Water Absorption of Plastics; 1998.
- D. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 2003.
- E. ASTM D 2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor; 1995 (Reapproved 2001).
- F. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
- G. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Maintenance Instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Crane "Kemlite Glasboard-P with Surfaseal" : www.frpdesignsolutions.com
- B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PANEL SYSTEM

- A. Plastic Panel System: Factory finished panels, trim, sealant, and accessories.
- B. Backing: Water Resistant and Standard Gypsum Board Specified in Section 09260
- C. Surface Pattern: Smooth
- D. Color: See Color Schedule.
- E. Primers, Sealers, and Adhesives: Water-resistant type recommended by manufacturer.
- F. Joint Sealant: Clear translucent silicone.
- G. Trim and Accessories: Provide all One and Two Piece Vinyl Moldings and Nylon Drive Rivets for a complete moisture resistant installation.
- H. Thickness: 3/32 inch, nominal.
- I. Width: 48 inches.
- J. Height: 96 inches.
- K. FRP Edge Trim: Provide all one piece metal edge trim and butt joint trim for a complete moisture resistant installation.
 - 1. Material: Manufacturer's standard Aluminum trim. Single piece in vertical runs, longest practical lengths in horizontal runs.
 - 2. Provide typical Division Bar, Inside Corner, Outside Corner, and End Caps.

2.03 ACCESSORIES

- A. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
 - 1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that Surfaces to receive Paneling are accurately sized and located, dry, clean, smooth, sound, secure, free from conditions that would damage Paneling, impair adhesive-bond, or mar Paneling finished appearance, and are otherwise properly prepared.
- C. If substrate preparation is the responsibility of another installer, notify General Contractor of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Take panels out of cartons and allow to acclimatize to room conditions for at least 48 hours prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Clean surfaces thoroughly prior to installation.
- D. Protect existing surfaces from damage due to installation.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use the adhesives recommended by the panel manufacturer unless prohibited by local regulations; obtain manufacturer's approval of alternative adhesives.

- C. Install continuous bead of silicone sealant in each joint and trim groove and between trim and adjacent construction, maintaining 1/8 inch expansion space.
- D. Avoid contamination of panel faces with adhesives, solvents, or cleaners; clean as necessary and replace if not possible to repair to original condition.
- E. Protect installed products until completion of project.
- F. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION

SECTION 07 1900 WATER REPELLENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water repellents applied to exterior, masonry, stone, and concrete surfaces.
- B. Pressure washing.
- C. Anti-Graffiti Coatings.

1.02 RELATED REQUIREMENTS

- A. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

- A. RILEM Tube Test to assess water absorption properties of walls and other substrates: 1980 report, "Tentative Recommendations: Recommended Tests to Measure the Deterioration of Stone and to Assess the Effectiveness of Treatment Methods," by RILEM Technical Commission 25-PEM.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a meeting at least one week prior to starting work; require attendance of affected installers; invite Architect and Owner.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide product description, details of tests performed, limitations, chemical composition, and _____.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention; cautionary procedures required during application.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Field Reports: Report whether manufacturer's "best practices" are being followed; if not, state corrective recommendations. Email report to Architect the same day as inspection occurs; mail report on manufacturer's letterhead to Architect within 2 days after inspection.
- F. Installer's Qualification Statement.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements for additional provisions.
 - 2. Extra Water Repellent Material: Two gallons of type installed.
 - 3. Provide one gallon of anti-graffiti coating.
 - 4. Provide 2 gallons of manufacturer's recommended graffiti removal product.

1.06 PERFORMANCE REQUIREMENTS

- A. Performance Requirements for CMU:
 - 1. No change in surface texture, no blotchy appearance
 - 2. ASTM C140 "Sampling and Testing of Concrete Masonry Units, Absorption" - 24 hour submersion test:
 - a. 99.4 percent reduction in water absorption.
 - 3. ASTM C642 "Specific Gravity, Absorption and Voids in Hardened Concrete" - 24 hour immersion:
 - a. 97.5 percent effective.
 - 4. ASTM D1653 "Moisture Vapor Permeability of Organic Coatings":
 - a. 68 g/sq ft/24 hours - 97 percent breathability.

5. ASTM E514 "Water Permeance of Masonry."
 - a. 100 percent reduction in leakage rate over the control wall.
 - b. Control wall must have a leakage rate of at least 6.0 liters/hours.
- B. Performance Requirements for Graffiti-Resistant Coatings:
 1. Cleaning Cycles: Non-sacrificial, minimum 8 to 10 cleanings cycles without reapplication.
 2. Breathability: Greater than 95 percent water vapor transmission.
 3. Surface Appearance: No appreciable difference compared to non-coated surface.
 4. Ultraviolet light stability.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience and approved by manufacturer
- C. Test Application: Apply a finish sample for each type of water repellent and substrate required and of graffiti-resistant coating. Duplicate finish of approved sample. Test area for RILEM uptake test(s) can serve as finish samples.
 1. Locate each test application as directed by Architect.
 2. Size: 9 sq. ft. minimum.
 3. Final approval by Architect of water-repellent and graffiti-resistant coating application will be from test applications.
 4. Conduct RILEM test(s) to comply with requirements specified in Field Quality Control Article.

1.08 MOCK-UPS

- A. Prepare representative surface 36 by 36 inches in size using specified materials and preparation and application methods on surfaces identical to those to be coated; approved mock-up constitutes standard for workmanship.
- B. Verify that water repellent will effectively repel moisture from surface, and will produce no surface stains.
- C. Conduct RILEM Tube tests to determine water absorption or penetration.
- D. Locate where directed.
- E. Mock-up may remain as part of work.

1.09 FIELD CONDITIONS

- A. Protect liquid materials from freezing.
- B. Do not apply water repellent when ambient temperature is lower than 50 degrees F or higher than 100 degrees F.
- C. Do not apply water repellents when wind velocity is higher than 10 mph.

1.10 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for [water repellency].

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Silane, Siloxane, Silane-Siloxane Blend, and Siliconate Water Repellents:
- B. Anti-Graffiti Coating
 1. Evonik Degussa Industries, Protectosil ANTI-GRAFFITI; www.protectosil.com
 2. Substitutions: See Section 01 6000 - Product Requirements.

- C. Graffiti-Resistant Coatings same as water repellent manufacturer. No exceptions.

2.02 MATERIALS

- A. Water Repellent: Non-glossy, colorless, penetrating, water-vapor-permeable, non-yellowing sealer, that dries invisibly leaving appearance of substrate unchanged.
 - 1. Applications: Vertical surfaces and non-traffic horizontal surfaces.
 - 2. Maintains dry appearance when wetted.
 - 3. Silane, siloxane, silane-siloxane blend, or siliconate that reacts chemically with concrete and masonry.
 - 4. Water-based siloxane, silane, or blend that reacts chemically with concrete and masonry.
 - a. Manufacturers:

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify joint sealants are installed and cured.
- C. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of water repellent.

3.02 PREPARATION

- A. Protection of Adjacent Work:
 - 1. Protect adjacent landscaping, property, and vehicles from drips and overspray.
 - 2. Protect adjacent surfaces not intended to receive water repellent.
- B. Prepare surfaces to be coated as recommended by water repellent manufacturer for best results.
- C. Do not start work until masonry mortar substrate is cured a minimum of 60 days.
- D. Pressure wash surfaces to be coated.
- E. Allow surfaces to dry completely to degree recommended by water repellent manufacturer before starting coating work.

3.03 PREPARATION FOR GRAFFITI-RESISTANT APPLICATION

- A. Surface Preparation:
 - 1. Clean surfaces to receive coating of dirt, oil, graffiti, grease, laitance, and other contaminants. Clean all other surfaces by mid-pressure water (1500 psi) when required or recommended by manufacturer.
 - 2. Remove dirt, dust and materials that will interfere with the proper and effective application of the graffiti-resistant coating. Prepare the surfaces as recommended by the graffiti-resistant manufacturer.
 - 3. Check the compatibility of all sealants and patching material to be used with the anti-graffiti coating.
 - 4. Sealants, patching materials, and expansion joints shall have been installed and approved.

3.04 APPLICATION

- A. Apply water repellent in accordance with manufacturer's instructions, using procedures and application methods recommended as producing the best results.
- B. Apply at rate recommended by manufacturer, continuously over entire surface.
- C. Apply number of coats recommended by manufacturer at their coverage rates.
- D. Remove water repellent from unintended surfaces immediately by a method instructed by water repellent manufacturer.

3.05 GRAFFITI-RESISTANT COATING APPLICATION

- A. Apply product in accordance with manufacturer's application instructions and recommendations for this specific project. Provide written copy of manufacturer's recommendations.
- B. Apply at temperature and weather conditions recommended by the manufacturer.
- C. Brush out surface residue thoroughly until they completely penetrate into the surface.
- D. Protect treated areas from rain and other surface water for a period of not less than four hours after application

3.06 FIELD QUALITY CONTROL

- A. Test Area: Before any water repellent application, perform the following field evaluation.
 - 1. Prepare a three foot by three foot area to be sprayed with the water repellent where directed by the Architect. Apply the water repellent at a rate of square foot per gallon as recommended by manufacturer to meet warranty requirements.
 - 2. After allowing five days for the sample to cure, run a RILEM uptake test on the treated area. Place one tube on the masonry and one tube on a mortar joint. Contact Architect at least one week prior to the application of the water repellent and the test.
 - 3. Repeat the test area procedure prior to application of graffiti-resistant coating.
- B. Coverage Spray Test: In the presence of Architect, hose down a dry, repellent-treated surface to verify complete and uniform product application. A change in surface color will indicate incomplete application.
 - 1. Notify Architect seven days in advance of the dates and times when surfaces will be tested.
 - 2. After surfaces have adequately dried, recoat surfaces that show water absorption.
 - 3. Run random RILEM tests on each elevation of structure.
- C. Manufacturer's Field Services: Furnish written certification that surface preparation method and final condition has manufacturer's approval and comply with warranty.
 - 1. Test Area: Furnish results of test area absorption on each type of substrate. Test results shall determine application rate.

3.07 DISPOSAL

- A. Contain and neutralize excess water repellent to Department of Environmental Quality standards.
- B. Dispose of neutralized excess repellent properly. Do not discharge into Sanitary Sewer or Storm Sewer Systems.

3.08 SCHEDULE

- A. Apply Water Proofing and Anti-Graffiti Coating to vertical surfaces of all exterior Concrete Masonry and Concrete that is not within a secure fenced area.
- B. Apply Water Proofing to vertical surfaces of all other exterior Concrete Masonry and Concrete.

END OF SECTION

SECTION 07 2100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, exterior wall behind _____ wall finish, and interior wall with facer providing exposed finish.

1.02 RELATED REQUIREMENTS

- A. Section 07 5400 - Thermoplastic Membrane Roofing: Insulation specified as part of roofing system.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2019.
- B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2022.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.

1.04 SUBMITTALS

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

1.05 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
- B. Insulation in Wood Framed Walls: Batt insulation with separate vapor retarder.
- C. Insulation over Roof Deck: Polyisocyanurate board.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
 - 4. Board Size: 48 x 96 inch.
 - 5. Board Thickness: 1-1/2 inches.
 - 6. Board Edges: Square.
 - 7. Type and Water Absorption: Type XII, 0.3 percent by volume, maximum, by total immersion.
 - 8. R-Value per Inch: 5 per inch of thickness maintained over the life of the product in use.
 - 9. Compressive Resistance: 15 psi.
 - 10. Board Density: 1.3 lb/cu ft.
 - 11. Products:

- a. Kingspan Insulation LLC; GreenGuard XPS TYPE IV 25 PSI:
www.trustgreenguard.com.
 - b. Owens Corning Corporation: www.ocbuildingspec.com/sle.
- 12. Extent of Work and R-value:
- B. Rigid Cellular Polyisocyanurate (ISO) Thermal Insulation Board with Facers Both Sides: Complying with ASTM C1289.
 - 1. Classifications:
 - a. Type I: Faced with aluminum foil on both major surfaces of core foam.
 - 1) Class 2 - Glass fiber reinforced or non-reinforced core foam.
 - 2) Compressive Strength: 16 psi, minimum.
 - 3) Thermal Resistance, R-value: At 1-1/2 inch thick; 9.0, minimum, at 75 degrees F.
 - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Board Size: 48 inch by 96 inch.
 - 5. Board Thickness: 1 inch.
 - 6. Board Edges: Square.
 - 7. Products:
 - a. Atlas Wall CI Board, division of Atlas Roofing Corporation; EnergyShield:
www.atlasroofing.com.
 - b. Dow Chemical Company: www.dow.com/sle.
 - c. GAF: www.gaf.com/sle.
 - d. Rmax Insulation Products: www.rmaxinc.com
 - 8. Substitutions: See Section 01 6000 - Product Requirements.
 - 9. Extent of Work and R-Value:

2.03 BATT INSULATION MATERIALS

- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 4. Formaldehyde Content: Zero.
 - 5. Facing: Unfaced.
 - 6. Products:
 - a. CertainTeed Corporation: www.certainteed.com/#sle.
 - b. Johns Manville: www.jm.com/#sle.
 - c. ROCKWOOL; COMFORTBATT: www.rockwool.com/#sle.
 - d. Knauf Insulation GmbH: www.knaufinsulation.us.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
 - 7. Extent of Work and R-Value:
 - a. Exterior Walls: R-21.

2.04 INSULATION VAPOR RETARDERS

- A. Batt Insulation Vapor Retarder: Polyimide film vapor retarder that changes permeance with change in humidity; Certainteed MemBrain, or approved.
 - 1. Vapor Retarder Class: Class II.
 - 2. Water Vapor Permeance:
 - a. ASTM E 96, dry cup method: 1.0 perms (57ng/Pa*s*m2) or less.

- b. ASTM E 96, wet cup method: 10.0 perms (1144ng/Pa*s*m2) or greater.
- 3. Fire Hazard Classification: ASTM E 84:
 - a. Maximum Flame Spread Index: 20.
 - b. Maximum Smoke Developed Index: 55.
- 4. Extent: Over thermal batt insulation at all walls.
- 5. Manufacturers:
 - a. Certainteed Corporation: www.certainteed.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 FOAM SEALANT

- A. Provide one of the following:
 - 1. One-component, minimally expanding, low pressure-build, polyurethane foam sealant.
 - a. Locations of Use: At perimeter window and door shim spaces and crevices in exterior wall and roof.
 - b. Products: Great Stuff Pro.
 - 1) Substitutions: See Section 01 60 00 - Product Requirements.
 - 2. Closed cell, medium density spray applied polyurethane foam insulation and air barrier.
 - a. Locations of Use: At perimeter window and door shim spaces and crevices in exterior wall and roof.
 - b. Products: BASF Walltite ECO v.2: www.walltite.com.
 - 1) Substitutions: See Section 01 60 00 - Product Requirements.
- B. Foam insulation at voids or cavities in exterior wall or roof:
 - 1. Closed cell, medium density spray applied polyurethane foam insulation and air barrier.
 - a. Locations of Use: At voids and crevices in exterior wall and roof.
 - b. Products: BASF Walltite ECO v.2: www.walltite.com.
 - 1) Substitutions: See Section 01 60 00 - Product Requirements.

2.06 ACCESSORIES

- A. Tape: Polyethylene self-adhering type, mesh reinforced, 2 inch wide, compatible with vapor retarder.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Apply adhesive to back of boards:
 - 1. Three continuous beads per board length.
 - 2. Full bed 1/8 inch thick.
- B. Install boards horizontally on foundation perimeter.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. Install vapor retarder in continuous sheets over the inside face of all exterior wall surfaces and at bottom of batt ceiling insulation. Lap and seal sheet retarder joints over framing member face.
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

3.04 PROTECTION

- A. Do not permit installed insulation or vapor barriers to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2700 AIR BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air barriers.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with air barriers.

1.03 DEFINITIONS

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable but water vapor permeable, both to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

1.04 REFERENCE STANDARDS

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022.
- D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meetings:
 - 1. Hold a pre-installation conference, one week prior to start of weather barrier installation. Attendees shall include General Contractor, Architect, Weather Barrier Installer, Sheet Metal Installer, Owner's Representative, and Weather Barrier Manufacturer's Designated Representative.
 - 2. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.
- C. Shop Drawings: Provide drawings of special joint conditions.
- D. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.
- E. Manufacturer's qualification statement.
- F. Installer's qualification statement.

1.07 QUALITY ASSURANCE

- A. Single Source Responsibility:

1. Obtain weather barrier system and auxiliary materials including adhesive/primer, air barrier, flashings, and sealants from a single Manufacturer regularly engaged in the manufacturing and supply of the specified products.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience on similar-scale buildings.
- C. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

1.08 MOCK-UPS

- A. Install air barrier and accessories in a mock-up to be reviewed by the owner, architect, and contractor prior to the installation of the systems listed.
- B. Coordinate a site visit from the manufacturer's designated representative prior to weather barrier assembly installation, to perform mock-up visual inspection and analysis as required for warranty.
- C. General Contractor shall coordinate integration of weather barrier system, exterior wall cladding and trim, furring, sheet metal flashing, window, sealant, and related accessories into the mock-up.
- D. Locate where directed.
- E. Mock-up may not remain as part of work.

1.09 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.
- B. Do not perform Work during rain or inclement weather.
- C. Do not perform Work on frost covered substrates or surfaces that are wet to touch.

1.10 WARRANTY

- A. Provide manufacturer's 12 year "single-source" material and assembly warranty for air barrier membrane materials, sealant, and flashing membranes.

PART 2 PRODUCTS

2.01 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)

- A. Air Barrier Sheet, Self-Adhered:
 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 2. Water Vapor Permeance: 29 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
 3. Water Penetration Resistance Around Nails: Pass, when tested in accordance with ASTM D1970/D1970M (modified).
 4. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 5. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
 6. Seam and Perimeter Tape: As recommended by sheet manufacturer.
 7. Products:
 - a. Henry Company; Blueskin VP160: www.henry.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

- A. Primers, Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions for project conditions.
 - 1. Include opening flashings, sill flashings, liquid flashings, transition membranes, and other materials as required for a complete air barrier system.
- B. Thinners and Cleaners: As recommended by material manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready for work of this section.
- B. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.
- C. Do not proceed with this work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Self-Adhered Sheets:
 - 1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
 - 2. Lap sheets shingle fashion to shed water and seal laps airtight.
 - 3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
 - 4. Use same material, or other material approved by sheet manufacturer, to seal to adjacent substrates, and as flashing.
 - 5. At wide joints, provide extra flexible membrane allowing joint movement.
 - 6. Seal membrane terminations, heads of mechanical fasteners, around penetrations, piping, electrical and other apparatus extending through the water resistive air barrier.
- E. Openings and Penetrations in Exterior Air Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 - 3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
 - 4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
 - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.

6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.
 7. See Drawings for supplemental details for project-specific conditions.
- F. Detailing and Flashing:
1. Complete detailing and flashing installations per Air Barrier Manufacturer's installation guide, details, and this specification.
 2. Refer to Air Barrier Manufacturer details for further clarification and installation procedures including but not limited to the following:
 - a. Inside and outside corners
 - b. Pipe and Conduit penetrations
 - c. Shelf angles
 - d. Wall to foundation transitions
 - e. Reverse laps
 - f. Construction joints.
 - g. Rainscreen furring
 - h. Masonry veneer ties

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing.
- C. Do not cover installed air barriers until required inspections have been completed.
- D. Obtain approval of installation procedures from air barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.
- E. Take digital photographs of each portion of installation prior to covering up air barriers.

3.05 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

**SECTION 07 4113
METAL ROOF PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulated metal roof panel system of preformed steel panels.
- B. Metal roof panel system of preformed steel panels.
- C. Snow and ice retention system.

1.02 RELATED REQUIREMENTS

- A. Section 05 1200 - Structural Steel Framing: Roof framing and purlins.
- B. Section 06 1000 - Rough Carpentry: Roof sheathing.
- C. Section 07 2100 - Thermal Insulation: Rigid roof insulation.
- D. Section 07 4213 - Metal Wall Panels: Preformed wall panels.
- E. Section 07 9005 - Joint Sealers: Field-installed sealants.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- C. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- D. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).
- E. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2018).
- F. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).
- G. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.
 - 2. Installation methods.
 - 3. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
 - 2. Include structural analysis signed and sealed by qualified structural engineer, indicating conformance of roofing system to specified loading conditions, with attachment schedule specific to project.
- D. Verification Samples: For each roofing system specified, submit samples of minimum size 12 inches square, representing actual roofing metal, thickness, profile, color, and texture.

1. Include typical panel joint in sample.
 2. Include typical fastening detail.
- E. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- F. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

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

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.
- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.
- C. Special Warranty: Provide 2-year warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Architectural Metal Roof Panel Manufacturers:
1. Basis of Design: Taylor Metal Products: MS-200; 180 degree; www.taylormetal.com/#sle.
 2. AEP SPAN; www.aep-span.com.
 3. Morin Corporation: www.morincorp.com/#sle.
- B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
 - a. Dead Loads: Weight of roofing system, and roof-mounted components where indicated.
 - b. Live Loads: As required by ASCE 7.
 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
 3. Wind Uplift: Class 90 wind uplift resistance of UL 580.
 4. Air Infiltration: Maximum 0.06 cfm/sq ft at air pressure differential of 6.24 lbf/sq ft, when tested according to ASTM E1680.

5. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
6. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 METAL ROOF PANELS

- A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
 1. Steel Panels:
 - a. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 coating.
 - b. Steel Thickness: Minimum 24 gauge, 0.024 inch.
 2. Profile: Standing seam, with minimum 1-inch seam height; concealed fastener system for field seaming with special tool.
 3. Texture: Smooth.
 4. Length: Full length of roof slope, without lapped horizontal joints.
 5. Width: Maximum panel coverage of 18 inches.

2.04 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.
 1. Anchor clips shall be tested to establish that the clips will have 75% of the material thickness remaining after 100,000 cycles of the full range of motion.
- B. Bearing Plates: 24 gauge 4"x6" Zincalume coated steel bearing plate.

2.05 FINISHES

- A. Fluoropolymer Coil Coating System: Manufacturer's standard multi-coat metal coil coating system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss to match sample.
- B. Solar Reflectance Index (SRI): 82, Initial, less than 2:12 low-sloped roof.
- C. Underside finish: Manufacturer's standard off-white enamel.

2.06 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for weather barrier, slip sheet, roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- C. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- D. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- E. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

- A. Overall: Install roofing system in accordance with metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
 - 1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 - 2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. If required by metal roof manufacturer or underlayment manufacturer, install slip sheet over weather barrier before installing metal roof panels.
- D. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.

3.04 CLEANING

- A. At completion of each day's work, sweep panels, flashings and gutters clean. Do not allow fasteners, cuttings, filings or scraps to accumulate.
- B. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

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

- B. Replace damaged roof panels or accessories before date of Substantial Completion. Panels or flashings that have severe paint and/or substrate damage shall be replaced as directed by the Architect's or Owner's representative.

END OF SECTION

**SECTION 07 4213
METAL WALL PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured metal panels for exterior wall panels, interior liner panels, soffit panels, retrofit panels, and subgirt framing assembly, with insulation, related flashings, and accessory components.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wall panel substrate.
- B. Section 07 2100 - Thermal Insulation.
- C. Section 07 2500 - Weather Barriers: Weather barrier under wall panels.
- D. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.
- E. Section 07 2500 - Weather Barriers: Rainscreen furring assembly.

1.03 REFERENCE STANDARDS

- A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate dimensions, layout, joints, construction details, methods of anchorage, flashings, terminations, and _____.
- C. Samples: Submit two samples of wall panel and soffit panel, 12 inches by 12 inches in size illustrating finish color, sheen, and texture.
- D. Manufacturer's qualification statement.

1.05 QUALITY ASSURANCE

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

1.06 PRE-INSTALLATION MEETING

- A. Convene two weeks before starting work of this section.
- B. Review preparation and installation procedures, special conditions of the project.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefabricated material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide 20 year manufacturer warranty for degradation of panel finish including chalking and fading, peeling, cracking, and delamination.
- C. Special Warranty: Provide 2-year warranty covering water tightness and integrity of seals of metal wall panels. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer and installer of Metal Roof Panels specified in Section 07 4113 must be the same as the manufacturer and installer of Metal Wall Panels specified in Section 07 4213.
- B. Basis of Design: Taylor Metal Products; www.taylormetal.com/#sle.
- C. Other Acceptable Manufacturers:
 - 1. Centria, a Nucor Company: www.centria.com/#sle.
 - 2. Fabral: www.fabral.com/#sle.
 - 3. Morin Corporation: www.morincorp.com/#sle.

2.02 METAL WALL PANEL SYSTEM

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
 - 1. Provide exterior wall panels, interior liner panels, soffit panels, retrofit wall panels, and subgirt framing assembly.
 - 2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
 - 3. Design Pressure: In accordance with applicable codes.
 - 4. Maximum Allowable Deflection of Panel: $L/180$ for length(L) of span.
 - 5. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
 - 6. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
 - 7. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
 - 8. Corners: Factory-fabricated in one continuous piece with minimum 18 inch returns.
- B. Exterior Panels: << edit per project >>>
 - 1. Profile: Vertical and horizontal, as indicated; style as indicated.
 - 2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous gaskets.
 - 3. Material: Precoated steel sheet, minimum 22 gage thick minimum.
 - 4. Panel Width: 12 inches.
 - 5. Color: As indicated on drawings.
- C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- D. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- E. Anchors: Galvanized steel.

2.03 MATERIALS

- A. Precoated Steel Sheet: Aluminum-zinc alloy-coated steel sheet, ASTM A792/A792M, Commercial Steel (CS)) or Forming Steel (FS), with AZ50/AZM150 coating; continuous-coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.
- B. Exterior Finish Coating: DuraTech 5000; Polyvinylidene Fluoride, full 70 percent Kynar 500/Hylar 5000, consisting of a baked-on 0.15-0.20 mil corrosion resistant primer and a baked-on 0.70-0.80 mil finish coat with a specular gloss of 8 to 15 when tested in accordance with ASTM D523 at 60 degrees.

- C. Panel Back coating: Manufacturer's primer as specified above.

2.04 FINISHES

- A. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

2.05 ACCESSORIES

- A. Clips: Panel clip with spring tab at one end and hold-down clamp at other end, sized to fit panels.
 - 1. Product: Taylor Metal Products; Prestige Series Clip.
 - 2. Material: 16 gauge formed steel, galvanized in conformance with ASTM A-653 Class G90.
- B. Trims and Flashings: Material, metal thickness, and finish to match panels. Profiles indicated in Drawings.
- C. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.
- D. Concealed Sealants: Non-curing butyl sealant or tape sealant, see Section 07 9200
- E. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
- F. Profile Closures: Polyethylene foam, die-cut or formed to panel configuration.
- G. Sealants: Manufacturer's standard type suitable for use with installation of system; non-staining
 - 1. Color: To match metal panel color.
- H. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Exposed fasteners same finish as panel system.
- I. Field Touch-up Paint: As recommended by panel manufacturer.
- J. Bituminous Paint: Asphalt base.
- K. General: Provide fabricator's standard accessories, including fasteners, clips, anchorage devices and attachments for specific applications indicated on contract documents.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building framing members are ready to receive panels.

3.02 PREPARATION

3.03 INSTALLATION

- A. Install panels, trims, closures, and flashings on walls in accordance with manufacturer's instructions.
- B. Comply with methods and recommendations of SMACNA Architectural Sheet Metal Manual for flashing configurations required.
- C. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow to dry prior to wall panel installation.
- D. Fasten panels to structural supports; aligned, level, and plumb.
- E. Secure panels without warp or deflection.
- F. Locate joints over supports.
- G. Cutting and Fitting:
 - 1. Cut panels neat, square, and true with shearing action cutters. Torch or power saw cutting is prohibited.

2. Openings 6 inches and larger: Shop fabricate and reinforce to maintain original load capacity.
 3. Openings less than 6 inches: Field cutting is acceptable.
- H. Use concealed fasteners unless otherwise indicated by Architect.
- I. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.04 TOLERANCES

- A. Offset From True Alignment Between Adjacent Members Abutting or In Line: 1/16 inch, maximum.
- B. Variation from Plane or Location As Indicated on Drawings: 1/4 inch, maximum.

3.05 CLEANING

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.
- C. Panels or flashings with finish damage exposing metal or with substrate damage shall be replaced.
- D. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

**SECTION 07 5419
POLYVINYL-CHLORIDE (PVC) ROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fully adhered, welded seam system single-ply polyvinyl-chloride (PVC) roofing membrane.
- B. Insulation, flat and tapered.
- C. Air / Vapor barrier base sheet.
- D. Cover Boards.
- E. Accessories.
- F. Roofing stack boots, roofing expansion joints, and walkway pads.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets and accessories.

1.03 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2022.
- C. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2021.
- D. ASTM D4434/D4434M - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing; 2021.
- E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022.
- F. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces; 2011 (Reapproved 2019).
- G. FM (AG) - FM Approval Guide; current edition.
- H. FM DS 1-28 - Wind Design; 2016.
- I. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; 2016, with Editorial Revision (2020).
- J. NRCA (RM) - The NRCA Roofing Manual; 2023
- K. UL (DIR) - Online Certifications Directory; Current Edition.
- L. UL (FRD) - Fire Resistance Directory; Current Edition.
- M. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.
 - 1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's written information listed below.

1. Product data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, fasteners, and accessories.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements.
 4. Product Test Reports for roof membrane, insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.
- C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.
- D. Shop Drawings: Include roof plans, sections, details and attachment to other work including the following:
1. Layout and thickness of insulation.
 2. Base flashings and membrane terminations.
 3. Flashing details at penetrations.
 4. Tapered insulation thickness and slopes.
 5. Roof plan showing orientation of roof membrane, fastening spacings, and patterns for mechanically fastened components, and weld locations for the roofing system.
 6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
 7. Tie-in with air barrier.
 8. Scupper / Gutter details, including splicing, tie-ins and transitions to other work.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- G. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- H. Sustainable Design Submittals:
1. Test report showing solar reflectance index of membrane
 2. Certification documenting recycled content.
- I. Specimen Warranty: For approval.
- J. Warranty:
1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
 2. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.
- K. Manufacturer's qualification statement.
- L. Installer's qualification statement.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum twenty (20) years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section:
1. Approved by membrane manufacturer.

1.07 MOCK-UPS

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Provide mock-up for evaluation of surface preparation, installation methods, and workmanship. mock-up.
- C. Locate where directed.

- D. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- C. Protect products in weather protected environment, clear of ground and moisture.
- D. Protect foam insulation from direct exposure to sunlight.

1.09 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Weather Limitations: Proceed with installation only when the existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.10 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Material Warranty: Provide membrane manufacturer's warranty agreeing to replace material that shows manufacturing defects within 20 after installation.
- C. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace components of roofing system fail in materials or workmanship within the specified warranty prior, without monetary limitation.
 - 1. Warranty Term: 20 years from substantial completion.
 - 2. For repair and replacement include costs of both material and labor in warranty.
 - 3. Special no-dollar warranty includes roof membrane, base flashing, roof insulation, fasteners, cover boards, and other components of roofing system.
- D. Special Project Warranty: Submit roofing Installer's warranty signed by Installer covering the Work of this Section, including all components of the roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, vapor barriers and walkway products for a warranty period of two years from date of substantial completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Carlisle SynTec Systems: www.carlisle-syntec.com/#sle.
- B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING APPLICATIONS

- A. PVC polyester reinforced membrane roofing: One ply membrane, fully adhered, over insulation.
- B. Roofing Assembly Performance Requirements and Design Criteria:
 - 1. Solar Reflectance Index (SRI): 86, minimum, calculated in accordance with ASTM E1980.
 - a. Field applied coating may not be used to achieve specified SRI.
 - 2. Roof Covering External Fire Resistance Classification: Class A when tested per UL 790.
 - 3. Wind Uplift:
 - a. Designed to withstand wind uplift forces calculated with ASCE 7.

- b. Design Wind Speed: In accordance with local building code and authorities having jurisdiction (AHJ).
- 4. Insulation Thermal Resistance (R-Value): Provide R-Value over entire roof deck in accordance with local building code requirements.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Single Source Responsibility: Provide and install products from single source.
- B. Base Sheet: Manufacturer's standard, smooth-surfaced, self-adhering, SBS base ply, reinforced with non-woven polyester mat and saturated with asphaltic bitumen and SBS elastomers.
 - 1. Product:
 - a. Carlisle 725TR Base Sheet.
- C. Membrane:
 - 1. Material: Polyvinyl chloride (PVC) complying with ASTM D4434/D4434M.
 - 2. Thickness: 60 mil, 0.060 inch, minimum.
 - 3. Sheet Width: Factory fabricated into largest sheets possible.
 - 4. Color: At main buildings, top roof to be White. At South building, lower roofs to be gray.
 - 5. Products:
 - a. Carlisle SynTec Systems; SureFlex PVC.
- D. Seaming Materials: As recommended by membrane manufacturer.
- E. Membrane Fasteners: As recommended and approved by membrane manufacturer.
- F. Flexible Flashing Material: Material recommended by membrane manufacturer.
- G. Base Flashing: Provide waterproof, fully adhered base flashing system at all penetrations, plane transitions, and terminations.

2.04 DECK SHEATHING AND COVER BOARDS

- A. Cover Board: Polyisocyanurate (ISO) thermal board, complying with ASTM C1289; Type II - Faced with dark coated-glass facer on one side and light coated-glass facer on other surface of core foam, Class 4 with thickness of 1/2 inch, and Grade 1 with 109 psi, maximum, compressive strength.
 - 1. Product: Carlisle SecurShield HD Polyiso.

2.05 INSULATION

- A. Polyisocyanurate (ISO) Board Insulation: Complies with ASTM C1289, Type II, Class 1 - Faced with glass-reinforced felt on both surfaces of core foam.
 - 1. Grade and Compressive Strength: Grade 3, 25 psi, minimum.
 - 2. Board Thickness: 3 inches. Minimum to meet ASHRAE 90.1 for overall thickness.
 - 3. Product: Carlisle InsulBase.
- B. Polyisocyanurate (ISO) Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/2 inch per 12 inches unless otherwise indicated or required to meet indicated slope.

2.06 ACCESSORIES

- A. Prefabricated Flashing Accessories:
 - 1. Corners and Seams: Same material as membrane, in manufacturer's standard thicknesses.
 - 2. Penetrations: Same material as membrane, with manufacturer's standard cut-outs, rigid inserts, clamping rings, and flanges. Suitable for pipes, tubing and sealant pockets.
 - 3. Walkway Rolls: Sure-Flex Heat Weldable Walkway Rolls; 80 mils (0.080 inch) thick; gray membrane.

4. Miscellaneous Flashing: Non-reinforced PVC membrane; 60 mils (0.060 inch) (1.5 mm) thick, in manufacturer's standard lengths and widths. To be used in locations only where manufacturer allows.
- B. Insulation Adhesive:
 1. Products: As recommended by membrane manufacturer.
- C. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches wide; self adhering.
- D. Membrane Adhesive: As recommended by membrane manufacturer.
 1. Products:
 - a. Carlisle Low VOC Bonding Adhesive.
- E. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
- F. Sealants: As recommended by membrane manufacturer.
- G. Cleaner: Manufacturer's standard, clear, solvent-based cleaner.
- H. Primer: Manufacturer's recommended product.
- I. Edgings and Terminations: Manufacturer's standard edge and termination accessories.
 1. Finishes: no exposed galvanized finishes are allowed. Provide PVC-coated metals or prime and paint finish.
 - a. PVC Coated Sheet Metal.
 - b. Termination Bar.
 - c. Two-piece counter flashing.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.
- F. Verify that all work performed in in sequence with the manufacturer's instructions and that work is not performed in a way that would require rework or patching.

3.02 PREPARATION, GENERAL

- A. Clean substrate thoroughly prior to roof application.
- B. Do not begin work until other work that requires foot or equipment traffic on roof is complete.
- C. Apply manufacturer's recommended vapor retarder or temporary roof before roof installation.
- D. Before commencing work each day, the contractor shall prepare roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to substrate repairs, securement of substrates, eliminating all incompatible materials, and cleaning.
- E. Where conditions are found to be unsatisfactory, do not begin work until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 WOOD DECK PREPARATION

- A. Verify flatness and tightness of joints of wood decking. Verify that all wood decking edges are fully supported. Fill knot holes according to manufacturer's instructions.
- B. Confirm moisture content for wood deck is compatible with manufacturer's recommendations for system installation.

3.04 INSTALLATION - GENERAL

- A. Perform work in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Do not apply roofing membrane during unsuitable weather.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.
- F. Coordinate the work with installation of associated counterflashings installed by other sections as the work of this section proceeds.
- G. Wood nailers:
 - 1. Install wood nailers, underlayment, membrane and accessories in accordance with manufacturer's requirements.
- H. Install tapered insulation, saddles and crickets as required to ensure positive slope for complete roof drainage.
- I. Crickets, saddles and tapered edge strips shall be installed before installing Cover boards

3.05 VAPOR RETARDER INSTALLATION

- A. Apply vapor retarder to deck surface with adhesive in accordance with manufacturer's instructions.
 - 1. Extend vapor retarder under cant strips and blocking to deck edge.
 - 2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.
- B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.

3.06 INSULATION INSTALLATION

- A. Attachment of Insulation:
 - 1. Follow insulation system component product data sheets, published general requirements and, approvals.
 - 2. Fasten the insulation to meet the specified wind uplift resistance performance requirements and warranty requirements as indicated.
- B. When installed in two layers, install with long joints in continuous straight lines with end joints staggered, with second layer transverse to first layer, with joints staggered at least one-third of overall length from those of the first layer or as approved by manufacturer.
- C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- D. Lay boards with edges in moderate contact without forcing, and gap between boards no greater than 1/4 inch. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

- E. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.
- F. Do not apply more insulation than can be completely waterproofed in the same day.
- G. Neatly cut and trim insulation to fit around penetrations and projections and fill voids with insulation.
- H. Comply with insulation manufacturer's written instructions applicable to products and applications included.
- I. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain or snow at any time.
- J. Use the largest appropriate section. Use of multiple smaller sections when a single larger section could be used will not be permitted.

3.07 MEMBRANE APPLICATION

- A. Sweep loose debris from the substrate.
- B. Place sheet into place without stretching. Position membrane over acceptable substrate and fold membrane back so half the underside is exposed.
- C. Shingle joints on sloped substrate in direction of drainage.
- D. Fully Adhered Application: Apply Bonding Adhesive in accordance with the manufacturer's published instructions, to the exposed underside of the membrane and the corresponding substrate area. Do not apply Bonding Adhesive along the splice edge of the membrane to be hot air welded over the adjoining sheet. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
 - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
 - 2. Fold back the unbonded half of the sheet and repeat the bonding procedures.
- E. Position adjoining sheets to allow a minimum overlap of 2 inches to provide a minimum 1-1/2" hot air weld.
- F. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.
- G. Seam Welding:
 - 1. Seam Welding: Overlap edges and ends and seal seams by heat welding, minimum 2 inches.
 - 2. Cover all seams with manufacturer's recommended joint covers.
 - 3. Probe all seams once welds have thoroughly cooled. (Approximately 30 minutes.)
 - 4. Repair all deficient seams within the same day.
 - 5. Seal cut edges of reinforced membrane after seam probe is complete.
- H. At intersections with vertical surfaces:
 - 1. Extend membrane over cant strips and up a minimum of 8 inches onto vertical surfaces.
 - 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- I. Install roofing expansion joints where recommended by manufacturer. Make joints watertight.
- J. Install prefabricated joint components in accordance with manufacturer's instructions.
- K. Coordinate installation of roof drains and sumps and related flashings.
- L. Install walkway pads. Space pad joints to permit drainage.

- M. Daily Seal: Install daily seal per manufacturers instructions at the end of each work day. Prevent infiltration of water at incomplete flashings, terminations, and at unfinished membrane edges.

3.08 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for general requirements for field quality control and inspection.
- B. Manufacturer's Inspection:
 - 1. Arrange for roofing manufacturer's representative to inspect completed installation and provide written report that installation complies with manufacturer's written instructions.
 - 2. If manufacturer's representative finds installation deficient in any way, remove and replace waterproofing work until manufacturer's representative can certify acceptability of installation.
 - 3. Verify conformance to manufacturer's instructions.
- C. Independent Inspection:
 - 1. Building Envelope Consultant will periodically inspect the installation process of this Section.
 - 2. Contractor to arrange for Independent Inspection to observe completed installation prior to carrying out subsequent work.
- D. If inspection results show products in this Section does not comply with requirements, remove and replace or repair as recommended in writing by manufacturer.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- F. At no additional cost to Owner, remove and replace Work of this section found to be deficient or incomplete.

3.09 PROTECTION AND CLEANING

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Remove wrappings, empty containers, paper, and other debris from the roof daily. Dispose of debris in compliance with local, State, and Federal regulations.
- C. Remove bituminous markings from finished surfaces.
- D. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- E. Protect roofing system from damage and wear during remainder of construction period. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.
- F. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, sheet metal roofing, exterior penetrations, and other items indicated in Schedule.
- B. Sealants for joints within sheet metal fabrications.
- C. Interior fabricated sheet metal trim where shown on drawings.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Metal flashings embedded in masonry.
- B. Section 04 2000 - Unit Masonry: Through-wall flashings in masonry.
- C. Section 05 5000 - Metal Fabrications: Cold-rolled steel gutters, scuppers, downspouts.
- D. Section 07 4113 - Metal Roof Panels: Flashings associated with roofing system.
- E. Section 07 4213 - Metal Wall Panels: Flashings associated with wall panel system
- F. Section 07 5400 - Thermoplastic Membrane Roofing: Flashings associated with roofing system.
- G. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.
- H. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- D. ASTM B32 - Standard Specification for Solder Metal; 2020.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- F. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2025.
- G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2024).
- H. CDA A4050 - Copper in Architecture - Handbook; current edition.
- I. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

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

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Samples: Submit two samples, 12 by 12 inches in size, illustrating metal finish color.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented successful experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

1.08 MOCK-UPS

- A. Mock-ups: Provide sheet metal flashing and trim as required to complete integrated exterior mock-ups as specified in Section 01 4000 - Quality Requirements and other Sections.
- B. Coordinate with Mock-up described in Section 04 4200 Unit Masonry.

1.09 WARRANTY

- A. Provide two year warranty under provisions of Section 01 7800.
- B. Include material, installation, and repairs resulting from weather tightness failure.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.
- B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal, shop pre-coated with PVDF coating.
 - 1. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
 - 2. Color: As indicated on drawings.
- C. Stainless Steel: ASTM A666, Type 304 alloy, soft temper, minimum 28 gage, (0.0156 inch) thick; smooth No. 4 - Brushed finish.
- D. Metal Soffit Flashing: 18 gauge galvanized steel sheet. Perforated with 1/8 inch diameter holes at 3/16 inch on center each way. Minimum of 40% open area. Prime for field painting.

2.02 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of _____ type sheet metal, minimum _____ inches wide, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- F. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- H. Fabricate flashings to allow toe to extend 2 inches over roofing _____. Return and brake edges.

2.03 GUTTERS AND DOWNSPOUTS

- A. Gutters: SMACNA (ASMM) Rectangular profile.
- B. Downspouts: Round profile. Size as indicated on drawings.
- C. Gutters and Downspouts: Sizes as indicated on the drawings.
- D. Accessories: Profiled to suit gutters and downspouts.
 - 1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
 - 2. Gutter Supports: Brackets.
 - 3. Downspout Supports: Brackets.
- E. Seal metal joints.

2.04 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Underlayment: ASTM D226/D226M, organic roofing felt, Type I, No. 15.
- C. Slip Sheet: Rosin-sized sheathing paper.
- D. Primer Type: Zinc chromate.
- E. Protective Backing Paint: Zinc molybdate alkyd.
- F. Concealed Sealants: Non-curing butyl sealant.
- G. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- H. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.
- I. Solder: ASTM B32, Alloy Grade - Sn50 (50/50).

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

3.03 INSTALLATION

- A. Comply with drawing details.
- B. Install Work watertight, without waves, warps, buckles, tool marks, fastening stresses, distortion, or defects which impair strength of mar appearance.
- C. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted.
- D. Apply plastic cement compound between metal flashings and felt flashings.
- E. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- F. Seal metal joints watertight.
- G. Install planes and lines in true alignment. Allow for sheet metal expansion and contraction.

- H. Gutters:
 - 1. Provide expansion joints midway between downspouts; provide end caps spaced 1/2 inch apart. Rivet and seal thimble flanges to gutter bottom.
 - 2. Cover expansion joint tops with loose-lock cover; extend cover over outer edge of gutter, and embed in sealant.
 - 3. Secure gutter to roof framing with straps spaced 24" o.c. max.
 - 4. Install gutters level.
- I. Downspouts:
 - 1. Attach to wall with 1 1/2" wide straps as scheduled. Reinforce straps to allow standoff from walls for straight drop.
 - 2. Locate straps at downspout tops, bottom, horizontal joints, and 10 ft maximum centers.
 - 3. Secure straps to wall with fastener heads covered with strap-tabs.
 - 4. Except where otherwise shown on Drawings, install downspouts plumb; modify straps if necessary.
 - 5. Connect downspouts to downspout boots installed by others. Grout connection watertight.
- J. Copings:
 - 1. Install copings with continuous cleat on the exterior side, fastened at 16 inches on center. Use exposed fasteners with neoprene washers through elongated holes on the roof side, at 24 inches on center.

3.04 SCHEDULE

- A. Gutters: Precoated steel, 24 gage.
- B. Downspouts: Precoated steel, 24 gage.
- C. Gutter and Downspout Supports and Straps: Match material, 14 gage.
- D. Through Wall Scuppers: 26 gage stainless steel.
- E. Through Wall Scupper Collection Boxes: 26 gage stainless steel.
- F. Drip Edge Flashings: 24 gage stainless steel.
- G. Drip Edge at Masonry Through-Wall Flashing: 24 gage stainless steel.
- H. Coping, Cap, Parapet, and Ledge Flashings: 24 gage precoated galvanized steel, unless otherwise indicated.
- I. Sill Flashings: 26 gage stainless steel.
- J. Roofing Penetration Flashings, for Pipes, Structural Steel, and Equipment Supports: 24 gage galvanized steel, unless otherwise indicated.
- K. Other flashings as shown on Drawings: As indicated.

END OF SECTION

SECTION 07 8400 FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping systems.
- B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Divisions 21, 22, 23, 26: Firestopping of mechanical, electrical, and plumbing work.

1.03 REFERENCE STANDARDS

- A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2020.
- B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a (Reapproved 2017).
- C. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems; 2015 (Reapproved 2019).
- D. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus; 2020.
- E. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies; 2013 (Reapproved 2017).
- F. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
- G. ITS (DIR) - Directory of Listed Products; current edition.
- H. FM (AG) - FM Approval Guide; current edition.
- I. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2017).
- J. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.
- K. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.
- L. UL (FRD) - Fire Resistance Directory; Current Edition.
- M. OSSC - Oregon Structural Specialty Code: Current Edition

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- C. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- D. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.
- E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

- G. Certificate from authority having jurisdiction indicating approval of materials used.
- H. Manufacturer's qualification statement.
- I. Installer's qualification statement.

1.05 PERFORMANCE REQUIREMENTS

- A. Delegated-Design Submittal: For penetration firestopping indicated to comply with performance requirements and design criteria, including product data and, where applicable, engineering judgment drawings signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Submit submittals as "Deferred Submittals" in accordance with Section 01 30 00 - Administrative Requirements. Transmit a copy of each submittal indicating agency approval to the Architect for record.

1.06 QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 - 3. For those firestop applications that exist but there is no UL tested system available through any manufacturer, a manufacturer's engineering judgement derived from similar UL system designs or other tests should be submitted by the contractor to local authorities having jurisdiction for their review and approval prior to installation.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
 - 1. Verification of minimum three years documented experience installing work of this type.

1.07 SEQUENCING

- A. Sequence Work to permit firestopping materials to be installed after adjacent and surrounding work is complete.

1.08 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Firestopping Materials: Any materials meeting requirements.
- B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
- C. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
- D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- E. Fire Ratings: See Drawings for required construction assemblies and ratings.

2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
- B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
- C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
- D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
 - 1. For penetrations by combustible items including; insulated metal pipe, jacketed PVC, flexible cable or cable bundles, cable trays, and plastic pipe, an intumescent material is required to maintain fire rating of the assembly penetrated.

2.03 FIRESTOPPING SYSTEMS

- A. Firestopping: Any material meeting requirements.
 - 1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.
 - 2. Surface Burning Characteristics: Conform to OSSC.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.

3.03 INSTALLATION

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by authorities having jurisdiction.

3.04 IDENTIFICATION

- A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of firestopping edge so labels will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:

1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage" or similar indication that the penetration is fire-rated.
2. Contractor's name, address, and phone number.
3. Designation of applicable testing and inspecting agency.
4. Date of installation.
5. Manufacturer's name.
6. Installer's name.

3.05 CLEANING

- A. Clean adjacent surfaces of firestopping materials.

END OF SECTION

SECTION 07 9005 JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 07 2500 - Weather Barriers: Sealants required in conjunction with air barriers and vapor retarders:
- C. Section 07 8400 - Firestopping: Firestopping sealants.
- D. Section 08 8000 - Glazing: Glazing sealants and accessories.
- E. Section 09 2116 - Gypsum Board Assemblies: Acoustic sealant.

1.03 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2017.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2022.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- E. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2017).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.05

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.
 - 1. Include temperature ranges for storage and application of materials, and special cold-weather application requirements or limitations.
 - 2. SpecData sheet for substrate cleaner and substrate primer recommended by sealant manufacturer for specific substrate surface and conditions.
- C. Samples: Submit two samples, 1/2 x 4 inch in size illustrating sealant colors for selection.
- D. Manufacturer's Installation Instructions: Indicate special procedures.
- E. Certificate signed by sealant manufacturer, certifying that Installer complies with requirements.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years experience.

1.08 MOCK-UP

- A. Provide mock-up of sealant joints in conjunction with window under provisions of Section 01 4000.
- B. Construct mock-up with specified sealant types and with other components noted.

- C. Locate where directed.
- D. Mock-up may remain as part of the Work.

1.09 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.10 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective workmanship within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.
- D. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period for Silicone Sealants: 20 years from date of Substantial Completion.
 - 2. Warranty Period for All other Types of Sealants: 5 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Gunnable and Pourable Sealants:
 - 1. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Dow Corning Corporation: www.dowcorning.com.
 - 4. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 - 5. Pecora Corporation: www.pecora.com.
 - 6. Tremco Global Sealants: www.tremcosealants.com.
 - 7. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. *Definitions from ASTM C 920:*
 - 1. *Grade: Characteristics of sealant during installation. P - Pourable, NS - Non-Sag, SL, Self-Leveling,*
 - 2. *Class: Measurement of movement, as a percentage*
 - 3. *Uses: A - appropriate for Aluminum, G - appropriate for glass, I - continuously submerged, M - appropriate for Mortar, NT - for non-traffic areas, T - for traffic areas, O - for use with other substrates not listed otherwise.*
 - 4. *Type: Type S - Single Component, Type M - Multi-Component*
- C. Type ____ - General Purpose Exterior Sealant: Polyurethane; ASTM C920, Grade NS, Class 25 minimum; Uses M, G, and A; single component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Product: Similar to NP2 manufactured by Soneborn or equal.
 - 3. Applications: Use for:
 - a. Control, expansion, and soft joints in masonry.

- b. Joints between concrete and other materials.
 - c. Joints between metal frames and other materials.
 - d. Other exterior joints for which no other sealant is indicated.
- D. Type ____ - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Product: Sonolac manufactured by Sonneborn or equal.
 - 3. Applications: Use for:
 - a. Interior wall and ceiling control joints.
 - b. Joints between door and window frames and wall surfaces.
 - c. Other interior joints for which no other type of sealant is indicated.
- E. Type ____ - Bathtub/Tile Sealant: White silicone; ASTM C920, Uses I, M and A; single component, mildew resistant.
 - 1. Product: Omniplus manufactured by Sonneborn or equal.
 - 2. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bath countertops and wall surfaces.
- F. Type ____ - Acoustical Sealant for Concealed Locations:
 - 1. Applications: Use for concealed locations only:
 - a. Sealant bead between top stud runner and structure and between bottom stud track and floor.
- G. Interior Floor Expansion Joint Sealant: Polyurethane, self-leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Product: SL-1 manufactured by Sonneborn.
 - 3. Applications: Use for:
 - a. Expansion joints in floors.

2.03

2.04 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056 sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker where joint backing is not used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- H. Tool joints concave. Remove and replace sealant in joints improperly tooled.

[illegible]

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Provide periodic field-adhesion testing as work progresses. Submit test results after each test.
 - 2. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.
 - 3. 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.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 4. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 - 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.05 CLEANING

- A. Clean adjacent soiled surfaces.

3.06 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

**SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Fire-rated hollow metal doors and frames.
- D. Sound-rated hollow metal doors and frames.
- E. Hollow metal borrowed lites glazing frames.
- F. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED REQUIREMENTS

- A. Section 08 1416 - Flush Wood Doors.
- B. Section 08 7100 - Door Hardware.
- C. Section 09 9113 - Exterior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2018.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2017.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- E. 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; 2021a.
- F. 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; 2018a.
- G. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- H. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- I. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames; 2016.
- J. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- K. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- L. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- M. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2017.
- N. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
- O. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2022.
- P. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. To provide a higher level of coordination the following building materials must be provided by the same sub-contractor.
 - 1. 08 1113 - Hollow Metal Doors and Frames
 - 2. 08 1416 - Flush Wood Doors
 - 3. 08 7100 - Door Hardware
- B. The steel door and frame supplier shall be a manufacturer or distributor regularly engaged in supplying hollow metal products in this geographic area who has competent field personnel available to consult with the Architect and Contractor regarding applications or field installation problems.
- C. It is the intent of this specification to provide a general guideline for the quality, function, and design of the hollow metal doors, frames, and windows. It is the specific responsibility of the hollow steel supplier to furnish products which are fully functional, in full compliance with state and local building codes, fire codes, and disability and accessibility codes. Any supplier bidding on this section of the work shall notify the Architect prior to bidding, in accordance with Instructions to Bidders, of discrepancies or will be assumed to have included correct material to make this compliance.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
- D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- E. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com.
 - 3. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
 - 4. Steelcraft, an Allegion brand: www.allegion.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements;
 - galvannealed steel complying with ASTM A653/A653M, cold-rolled steel

complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.

2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 3. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 4. Galvanizing : All components hot-dipped zinc-iron alloy-coated (galvannealed), minimum A40/ZF120.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 3. Door Thickness: 1-3/4 inches, nominal.
 4. Insulating Value: U-value of 0.50, when tested in accordance with ASTM C1363.
 5. Weatherstripping: Refer to Section 08 7100.
- B. Interior Doors, Non-Fire Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
 2. Door Thickness: 1-3/4 inches, nominal.
- C. Sound-Rated Interior Doors:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
 2. Sound Transmission Class (STC) Rating of Door and Frame Assembly: STC of 39, minimum, calculated in accordance with ASTM E413, and tested in accordance with ASTM E90.
 3. Door Core Material: Manufacturer's standard construction as required to meet acoustic requirements indicated.
 4. Door Thickness: As required to meet acoustic requirements indicated.
 5. Sound Seals: Integral, in door and/or frame.

6. Opening Force of Sound-Rated Doors, Non-Fire-Rated: 5 pounds, maximum, in compliance with ADA Standards.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Interior Door Frames, Non-Fire Rated: Face welded type.
 1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
- C. Door Frames, Fire-Rated: Face welded type.
 1. Fire Rating: Same as door, labeled.
- D. Sound-Rated Door Frames: Face welded type.

2.05 ACCESSORIES

- A. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Install door hardware as specified in Section 08 7100.
- E. Comply with glazing installation requirements of Section 08 8000.
- F. Coordinate installation of electrical connections to electrical hardware items.
- G. Touch up damaged factory finishes.

3.03 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

- A. Adjust for smooth and balanced door movement.
- B. Adjust sound control doors so that seals are fully engaged when door is closed.

3.05 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

**SECTION 08 1416
FLUSH WOOD DOORS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush wood doors; flush and flush glazed configuration; fire-rated, non-rated, acoustical, and special function.
- B. Factory finishing.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 - HOLLOW METAL DOORS AND FRAMES.
- B. Section 08 7100 - Door Hardware.
- C. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- C. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. To provide a higher level of coordination the following building materials must be provided by the same sub-contractor.
 - 1. 08 1113 - Hollow Metal Doors and Frames
 - 2. 08 1416 - Flush Wood Doors
 - 3. 08 7100 - Door Hardware

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Warranty, executed in Owner's name.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

1.07 MOCKUP

- A. Mockup one door with largest glass relite showing installation of door hardware, wood stops, glass and glazing tape.
- B. Approved mock up may remain as part of the work.

1.08 DELIVERY, STORAGE, AND HANDLING

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

1.09 WARRANTY

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Algoma: www.algomahardwoods.com.
 - 2. Haley Brothers: www.haleybros.com/#sle.
 - 3. Lynden Door, Inc.
 - 4. Masonite Architectural; Aspiro Select Wood Veneer Doors: www.architectural.masonite.com/#sle.
 - 5. Vancouver Architectural Doors: www.vancouverdoorco.com.
 - 6. VT Industries: www.vtindustries.com.
 - 7. Western Oregon Door; www.oregondoor.com.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain added urea formaldehyde or doors that comply with CA 01350, the State of California's Department of Health Services Standard Practice for testing chemical emissions from building products used in schools, offices and other sensitive environments. Third party certification for this testing is required.
- B. Doors: See drawings for locations and additional requirements.
 - 1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- C. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.

2.03 DOOR AND PANEL CORES

- A. Doors with full light and half lite glass - Non-Rated Solid Core: Type: Staved lumber core (SLC), plies and faces as indicated.
- B. All other doors - Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- C. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face; unless otherwise indicated.
 - 1. Vertical Edges: Compatible hardwood.
 - 2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
- B. Facing Adhesive: Type II - water resistant.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.

- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge for hardware reinforcement.
 - 2. Provide solid blocking for other throughbolted hardware.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Fabricate any Fire Rated doors to receive panic hardware with inner blocking which will permit hardware installation without through-bolting
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- F. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
 - 1. Stain color: Maple, Clear
 - 2. Transparent:
 - a. System - 11 Polyurethane Catalyzed.
 - b. Sheen: Satin.

2.07 ACCESSORIES

- A. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.
- F. At Wood Glazing Stops: Install stops flush on both faces of doors, with no door face veneer showing. Install with tight miter corners.
- G. Protect veneer from damage during construction. Do not wedge open doors with any material that might cause the veneer to split or chip.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.
- C. Maximum Vertical Distortion (Bow): 1/8 inch measured with straight edge or taut string, top to bottom, over an imaginary 36 by 84 inches surface area.
- D. Maximum Width Distortion (Cup): 1/8 inch measured with straight edge or taut string, edge to edge, over an imaginary 36 by 84 inches surface area.

3.04 ADJUSTING

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

3.05 SCHEDULE

- A. See Door and Frame Schedule appended to this section.

END OF SECTION

**SECTION 08 3100
ACCESS DOORS AND PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall-mounted access units.
- B. Ceiling-mounted access units.

1.02 RELATED REQUIREMENTS

- A. Section 09 9123 - Interior Painting: Field paint finish.

1.03 REFERENCE STANDARDS

- A. ITS (DIR) - Directory of Listed Products; current edition.
- B. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Shop Drawings: Indicate exact position of each access door and/or panel unit.
- D. Manufacturer's Installation Instructions: Indicate installation requirements.
- E. Project Record Documents: Record actual locations of each access unit.

PART 2 PRODUCTS

2.01 WALL- AND CEILING-MOUNTED ACCESS UNITS

- A. Manufacturers:
 - 1. Activar Construction Products Group, Inc. - JL Industries; _____: www.activarcpg.com/#sle.
 - 2. ACUDOR Products Inc: www.acudor.com/#sle.
 - 3. Barco Manufacturing.
 - 4. Cierra Products.
 - 5. Dur-Red Products; www.dur-red.com.
 - 6. Karp Associates, Inc: www.karpinc.com/#sle.
 - 7. Milcor, Inc: www.milcorinc.com/#sle.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.
- B. Wall- and Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
 - 1. Material: Steel.
 - 2. Style: Exposed frame with door surface flush with frame surface.
 - a. Gypsum Board Mounting Criteria: Use drywall bead type frame.
 - b. Plaster Mounting Criteria: Use plaster bead type frame.
 - 3. Door Style: Single thickness with rolled or turned in edges.
 - 4. Frames: 16-gauge, 0.0598-inch minimum thickness.
 - 5. Single Steel Sheet Door Panels: 16-gauge, 0.0625-inch minimum thickness.
 - 6. Units in Fire-Rated Assemblies: Fire rating as required by applicable code for fire-rated assembly that access doors are being installed.
 - a. Provide products listed by ITS (DIR) or UL (FRD) as suitable for purpose indicated.
 - 7. Steel Finish: Primed.
 - 8. Primed and Factory Finish: Polyester powder coat; color as scheduled.

9. Door/Panel Size: As indicated on the drawings.
10. Hardware:
 - a. Hardware for Fire-Rated Units: As required for listing.
 - b. Hinges for Non-Fire-Rated Units: Continuous piano hinge.
 - c. Latch/Lock: Screw driver slot for quarter turn cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings are correctly sized and located.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to proceeding with this work.
- B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings, and secure units rigidly in place.
- C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

**SECTION 08 4313
ALUMINUM-FRAMED STOREFRONTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. Aluminum doors and frames.
- C. Weatherstripping.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware: Hardware items other than specified in this section.
- B. Section 08 8000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- G. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- H. 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).
- I. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, internal drainage details.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- F. Samples: Submit two samples 6 x 6 inches in size illustrating finished aluminum surface, glass, infill panels, glazing materials.

- G. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12" (300 mm) lengths of full-size components and showing details of the following:
 - 1. Joinery, including concealed welds.
 - 2. Anchorage.
 - 3. Expansion provisions.
 - 4. Glazing.
 - 5. Flashing and drainage.
- H. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.
- I. Fenestration Certificate: To facilitate Energy Code compliance, provide a certificate specifying glazing type, special coatings, spacers, gas fills, center-of-glass and overall U-factor, and center-of-glass SHGC for every type of site built glass used. Maintain on the jobsite available for the building inspector.
- J. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.
- C. Mockups: Construct one window section to demonstrate complete installation assembly and set quality standard for materials and installation. Review with Owner and Architect before completing remaining work.
- D. Approved mock-up may remain as part of the work.
- E. Full-Size Mock-up Testing: Have a specimen representative of project conditions tested by an independent testing agency for compliance with specified air infiltration and water penetration criteria.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.07 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide two year warranty against defects in material and workmanship of curtainwall components.
- C. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- D. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Aluminum-Framed Storefronts:
 - 1. Kawneer North America: www.kawneer.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING

- A. Center-Set Style, Thermally-Broken:
 - 1. Basis of Design: Kawneer Trifab Series VG 451T.

2.03 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Glazing Rabbet: For 1 inch insulating glazing.
 - 2. Glazing Position: Centered (front to back).
 - 3. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.
 - 4. Finish: Superior performing organic coatings.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 - 5. Finish Color: As selected by Architect from manufacturer's standard line.
 - 6. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 7. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 - 8. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 9. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
 - 10. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 - 11. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
 - 12. Preparation for Window Treatments: Provide reinforced interior horizontal head rail.
- B. Performance Requirements
 - 1. Wind Loads: Design and size components and system attachment methods to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Design Wind Loads: Comply with requirements of ASCE 7, basic wind speed of 95 mph.
 - b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 - 2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8.00 lbf/sq ft as defined in AAMA 501.

3. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.
4. Condensation Resistance Factor of Framing: 60, minimum, measured in accordance with AAMA 1503 with 1 inch insulating glass installed.

2.04 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 1. Framing members for interior applications need not be thermally broken.
 2. Glazing Stops: Flush.
 3. Structurally Reinforced Members: Extruded aluminum with internal reinforcement of structural steel member.
- B. Swing Doors: Glazed aluminum.
 1. Similar to Kawneer 500 Wide Stile Entrance.
 2. Thickness: 1-3/4 inches.
 3. Top Rail: 5 inches wide.
 4. Vertical Stiles: 5 inches wide.
 5. Bottom Rail: 10 inches wide. << or 12" ? verify >>
 6. Glazing Stops: Square.
 7. Finish: Same as storefront.
- C. Sills: Aluminum, manufacturer's standard for locations detailed.
- D. Deflection head channels: Aluminum, manufacturer's standard for locations detailed.

2.05 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M) 6063-T6 alloy and temper.
- B. Structural Steel Sections: ASTM A36/A36M; shop primed.
- C. Fasteners: Stainless steel.
- D. Exposed Flashings: Aluminum sheet, 20 gauge, 0.032 inch minimum thickness; finish to match framing members.
- E. Concealed Flashings: 0.018 inch thick galvanized steel.
- F. Glass: As specified in Section 08 8000.
- G. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- H. Glazing Accessories: See Section 08 8000.

2.06 FINISHES

2.07 HARDWARE

- A. For each door, include weatherstripping, sill sweep strip, and threshold.
- B. Door Hardware: As specified in Section 08 7100, except as included below.
- C. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
- D. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.
- E. Threshold: Extruded aluminum, one piece per door opening, ribbed surface; provide on all doors.
- F. Kick Plates: Synthetic sheet matching door finish. Kawneer Kydex Wear Shield or approved.

2.08 FABRICATION

- A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

- B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
- E. Arrange fasteners and attachments to conceal from view.
- F. Reinforce components internally for door hardware and door operators.
- G. Reinforce framing members for imposed loads.
- H. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies.
 - 1. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- I. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- J. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- K. Set thresholds in bed of sealant and secure.
- L. Install glass and infill panels using glazing method required to achieve performance criteria; see Section 08 8000.
- M. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 FIELD QUALITY CONTROL

- A. Test installed storefront for air infiltration in accordance with ASTM E783, with infiltration not to exceed 0.09 cfm/square foot.

3.05 ADJUSTING

- A. Adjust operating hardware and sash for smooth operation.

3.06 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Remove excess sealant by method acceptable to sealant manufacturer.

3.07 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

**SECTION 08 5413
FIBERGLASS WINDOWS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory fabricated fiberglass windows with fixed and operating sash.
- B. Glazed by factory or on-site; including infill panels.
- C. Operating hardware.
- D. Insect screens.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 07 9005 - Joint Sealers: Perimeter sealant and back-up materials.
- C. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2017.
- B. FS L-S-125 - Screening, Insect, Nonmetallic; 1972b, with Notice (1987).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, anchors, fasteners, glass, and internal drainage details.
- C. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, installation requirements.
- D. Manufacturer's Certificate: Certify that products of this section meet or exceed specified requirements.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

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

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.
- B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

1.07 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and after installation of sealants.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide ten year manufacturer warranty for defects in manufacturing, materials, and workmanship.

- C. Provide twenty year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same. Include coverage for degradation of color finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Jeld-wen
- B. Other acceptable manufacturers:
 - 1. JELD-WEN: Vinyl (V-4500) - <https://www.jeld-wen.com/https://www.jeld-wen.com/>.
 - 2. Substitutions: Not permitted.

2.02 WINDOW UNITS

- A. Fiberglass Windows: Hollow, tubular, multi-layer fiber reinforced material; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
 - 1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/ NAFS - 02.
 - 2. Configuration: As indicated on drawings.
 - 3. Color: Black.
 - 4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
 - 5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

2.03 COMPONENTS

- A. Frames: ____ inch wide by ____ inch deep profile; flush glass stops of screw fastened type.
 - 1. Type: Nailing flange (for new windows).
- B. Jamb Extension: Furnish factory jamb extension, as needed to fill depth of the wall opening.
- C. Insect Screen Frame: Rolled aluminum frame of rectangular sections; fit with adjustable hardware; nominal size similar to operable glazed unit.
- D. Insect Screens: FS L-S-125 woven plastic mesh; 14/18 mesh size.
 - 1. Color: Black.
- E. Weather strip: Sill weather strip is foam filled vinyl bulb. The bottom sash is sealed to the jambs using rigid vinyl with flexible seals. The top stationary sash seal is foam tape. The checkrails are sealed using rigid vinyl with flexible seals.
- F. Fasteners: Stainless steel.

2.04 GLASS AND GLAZING MATERIALS

- A. Glass and Glazing Materials: See Section 08 8000 for Types described below:
 - 1. Glass in Exterior Lights: Type _____.

2.05 SEALANT MATERIALS

- A. Glazing Sealant: _____ Type as specified in Section 08 8000.

2.06 HARDWARE

2.07 FABRICATION

- A. Fabricate framing, mullions and sash members with fusion welded corners and joints, in a rigid jig. Supplement frame sections with internal reinforcement where required for structural rigidity.
- B. Form sills and stools in one piece. Slope sills for wash.
- C. Form snap-in glass stops, closure molds, weather stops, and flashings for tight fit into window frame section.

- D. Form weather stop flange to perimeter of unit.
- E. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- F. Arrange fasteners to be concealed from view.
- G. Permit internal drainage weep holes and channels to migrate moisture to exterior. Provide internal drainage of glazing spaces to exterior through weep holes.
- H. Assemble insect screen frame, miter and reinforced frame corners. Fit mesh taut into frame and secure. Fit frame with four spring loaded steel pin retainers.
- I. Double weatherstrip operable units.
- J. Factory glaze window units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify wall openings and adjoining water-resistive barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- E. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- F. Install operating hardware.
- G. Install glass and infill panels using glazing method required to achieve performance criteria; see Section 08 8000.

3.03 TOLERANCES

- A. Maximum Variation from Level or Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

3.04 ADJUSTING

- A. Adjust hardware for smooth operation and secure weathertight closure.

3.05 CLEANING

- A. Remove protective material from pre-finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

END OF SECTION

**SECTION 08 5621
TRANSACTION WINDOWS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum Sliding Transaction Window.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate work with adjacent materials specified in other sections and as indicated on drawings and approved shop drawings.

1.03 RELATED REQUIREMENTS

- A. Section 07 9005 Joint Sealers: for sealing perimeter of transaction window.

1.04 SUBMITTALS

- A. Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, weights and finishes for window units..
- C. Shop Drawings: Submit for fabrication and installation of windows. Include details, elevations and installation requirement of finish hardware and cleaning.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver windows crated to provide protection during transit and job storage
- B. Inspect windows upon delivery for damage. Unless minor defects can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.
- C. Store windows at building site under cover in dry location.

1.07 PROJECT CONDITIONS

- A. Field measurements: Check opening by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1.08 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace transaction windows that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including deflections exceeding 1/4 inch (6 mm).
 - b. Failure of welds.
 - c. Faulty operation of sliding window hardware.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Three years from date of Substantial Completion

PART 2 PRODUCTS

2.01 SLIDING TRANSACTION WINDOW

- A. Basis of Design Product:
 - 1. Horizontal Sliding Window, Model Fawn, D1027A, by C.R. Laurence Co. Inc.; www.crlaurence.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

- B. Configuration: One fixed glazed panel and two horizontal sliding glazed panels.
- C. Operation: Manual open
- D. Frame: Aluminum frame modules shall be constructed of 6063-T5 extruded aluminum. Window rolls on top-hung ball bearing rollers. Catch locks included with all interior windows. Overall frame sizes are to be in accordance with the contract drawings.
- E. Lock: Keyed plunger lock
- F. Glazing: 1/4 inch, clear tempered
- G. Finish: Clear satin anodized
- H. Size: As indicated on drawings

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that window openings are ready for installation of windows
- B. Notify Architect if conditions are not suitable for installation of units; do not proceed until conditions are satisfactory

3.02 INSTALLATION

- A. Install in accordance with manufacturer's written instructions and recommendations.
- B. Repair damaged units as directed (if approved by the manufacturer and the architect) or replace with new units.

3.03 ADJUSTING

- A. Adjust operating components for smooth operation while also maintaining a secure, enclosure and a tight fit at the contact points; lubricate operating hardware.

3.04 CLEANING

- A. Clean frame and glazing surfaces after installation, complying with requirements contained in the manufacturer's instructions. Remove excess glazing sealant compounds, dirt or other substances.

3.05 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that all the windows do not incur any damage or deterioration, other than normal weathering, at the time of acceptance.

END OF SECTION

SECTION 08 7100 DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hardware for wood, aluminum, and hollow metal doors.
- B. Electrically operated and controlled hardware.
- C. Thresholds.
- D. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealants for setting exterior door thresholds.
- B. Section 08 0671 - Door Hardware Schedule: Schedule of door hardware sets.
- C. Section 08 1113 - HOLLOW METAL DOORS AND FRAMES.
- D. Section 08 1416 - Flush Wood Doors.
- E. Section 08 1170 - Prefinished Metal Door Frames
- F. Section 08 4313 - Aluminum-Framed Storefronts: Door hardware, except as noted in section.
- G. Section 08 7110 - Door Hardware Schedule
- H. Section 28 1000 - Access Control: Electronic access control devices.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. BHMA A156.1 - Standard for Butts and Hinges; 2021.
- C. BHMA A156.2 - Bored and Preassembled Locks and Latches; 2017.
- D. BHMA A156.3 - Exit Devices; 2020.
- E. BHMA A156.4 - Door Controls - Closers; 2019.
- F. BHMA A156.6 - Standard for Architectural Door Trim; 2021.
- G. BHMA A156.8 - Door Controls - Overhead Stops and Holders; 2021.
- H. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2017.
- I. BHMA A156.16 - Auxiliary Hardware; 2018.
- J. BHMA A156.21 - Thresholds; 2019.
- K. BHMA A156.22 - Standard for Gasketing; 2021.
- L. BHMA A156.29 - American National Standard for Exit Locks, Exit Alarms, Alarms for Exit Devices; 2017.
- M. BHMA A156.30 - High Security Cylinders; 2020.
- N. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators; 2019.
- O. DHI (H&S) - Sequence and Format for the Hardware Schedule; 2019.
- P. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.
- Q. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; 1993; also in WDHS-1/WDHS-5 Series, 1996.
- R. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- S. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

- T. OSSC - Oregon Structural Specialty Code; latest edition
- U. UL (DIR) - Online Certifications Directory; Current Edition.
- V. UL 437 - Standard for Key Locks; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. This specification is intended as a guideline for quality and operation and is not to be construed as a complete list. It is the specific responsibility of the hardware supplier to furnish complete hardware for all openings that is functional, meets the Owner's intended use, and in full compliance with all State and Local Building Codes, Fire Codes, disability and accessibility codes. Any supplier bidding on this section of the work shall notify the Architect prior to bidding, in accordance with Division 0 requirements of discrepancies or will be assumed to have included correct material to make this compliance
- B. To provide a higher level of coordination the following building materials must be provided by the same sub-contractor.
 - 1. 08 1113 - Hollow Metal Doors and Frames
 - 2. 08 1416 - Flush Wood Doors
 - 3. 08 7100 - Door Hardware
- C. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
- D. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- E. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
- F. Keying Requirements Meeting:
 - 1. Attendance Required:
 - a. Contractor.
 - b. Owner.
 - c. Architect.
 - d. Installer's Architectural Hardware Consultant (AHC).
 - e. Owner's Security Consultant.
 - 2. Agenda:
 - a. Establish keying requirements.
 - b. Verify locksets and locking hardware are functionally correct for project requirements.
 - c. Verify that keying and programming complies with project requirements.
 - d. Establish keying submittal schedule and update requirements.
 - 3. Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following:
 - a. Access control requirements.
 - 4. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.
 - 5. Deliver established keying requirements to manufacturers.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

- C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
 - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
 - 2. Comply with DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
 - a. Submit in vertical format; see Section 08 0671.
 - 3. List groups and suffixes in proper sequence.
 - 4. Door numbers must be in numerical sequence.
 - 5. Provide complete description for each door listed.
 - 6. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
 - a. Include clean and clear digital catalog cut sheets with products to be used on the project properly highlighted.
 - 7. Include account of abbreviations and symbols used in schedule.
- D. Shop Drawings - Electrified Door Hardware: Submit diagrams for power, signal, and control wiring for electrified door hardware that include details of interface with building safety and security systems. Provide elevations and diagrams for each electrified door opening as follows:
 - 1. Prepared by or under supervision of Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC).
 - 2. Elevations: Submit front and back elevations of each door opening showing electrified devices with connections installed and an operations narrative describing how opening operates from either side at any given time.
 - 3. Diagrams: Submit point-to-point wiring diagram that shows each device in door opening system with related colored wire connections to each device.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- F. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- G. Keying Schedule:
 - 1. Submit one digital copies of Keying Schedule in compliance with requirements established during Keying Requirements Meeting unless otherwise indicated.
- H. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.
- I. Operations & Maintenance Data: Hardware supplier will reissue a complete schedule when changes occur during the project, and will supply the contractor with a digital copy of the final hardware schedule for the O & M Manual.
- J. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Lock Cylinders: Ten for each master keyed group.
 - 3. Tools: One set of each special wrench or tool applicable for each different or special hardware component, whether supplied by hardware component manufacturer or not.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.

- C. Hardware Supplier Qualifications: Company specializing in supplying the type of products specified in this section with at least three years documented experience, and with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.
- D. Prior to final project acceptance, supplier's representative shall make one field inspection and certify, in writing to the Architect, that hardware installation complies with the project documents, approved hardware schedule, and Manufacturer's instructions, and that installation is complete and all hardware items have been properly installed and correctly adjusted, or provide a list of items that require correction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide Manufacturer's Standard Warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion.
 - 1. Closers: Five years, minimum.
 - 2. Exit Devices: Three years, minimum.
 - 3. Locksets and Cylinders: Three years, minimum.
 - 4. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 RESPONSIBILITY

- A. This specification is intended as a guideline for quality and operation and is not to be construed as a complete list. It is the specific responsibility of the hardware supplier to furnish complete hardware for all openings that is functional, meets the Owner's intended use, and in full compliance with all State and Local Building Codes, Fire Codes, disability and accessibility codes. Any supplier bidding on this section of the work shall notify the Architect prior to bidding, of any observed discrepancies or will be assumed to have included correct material to make this compliance.

2.02 DESIGN AND PERFORMANCE CRITERIA

- A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
- B. Provide individual items of single type, of same model, and by same manufacturer.
- C. Provide door hardware products that comply with the following requirements:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. Accessibility: ADA Standards and ICC A117.1.
 - 3. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.
- D. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.
 - 1. Coordinate the installation, wiring and operation of any automatic door operators and electric strikes with any access control system.
- E. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. Refer to Door Hardware Schedule.
- F. Surface Mounted Closers: Check degree of opening for all closers. Mount closer away from exterior, halls, corridors and public spaces. Notify Architect during the Submittal

Review process if specified closers do not comply with this requirement. Unless specifically specified, do not restrict door swing.

G. Fasteners:

1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
 - a. Aluminum fasteners are not permitted.
 - b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
 - a. Self-drilling (Tek) type screws are not permitted.
3. Provide wall grip inserts for hollow wall construction.
4. Provide spacers or sex bolts with sleeves for through bolting of hollow metal doors and frames.

2.03 HINGES

A. Hinges: Provide hinges on every swinging door unless otherwise indicated.

1. Provide five-knuckle full mortise ball-bearing butt hinges unless otherwise indicated.
2. Provide hinges in the quantities indicated.
3. Provide non-removable pins on all outswinging exterior and interior doors.
4. Where electrified hardware is mounted in door leaf, provide power transfer hinges unless otherwise indicated.

B. Manufacturers:

1. McKinney; an Assa Abloy Group company: www.assaabloydss.com.
2. Bommer Industries, Inc: www.bommer.com/#sle.
3. Hager Companies; _____: www.hagerco.com/#sle.
4. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.
5. Substitutions: See Section 01 6000 - Product Requirements.

C. Hinges: Comply with BHMA A156.1, Grade 1.

1. Provide hinges on every swinging door.
2. Provide following quantity of butt hinges for each door:
 - a. Doors From 60 inches High up to 90 inches High: Three hinges.
 - b. Doors 90 inches High up to 120 inches High: Four hinges.

2.04 PIVOTS

A. Manufacturers:

1. McKinney or Rixson; an Assa Abloy Group company: www.assaabloydss.com.
2. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.
3. Substitutions: See Section 01 6000 - Product Requirements.

B. Door Weight: Medium; standard openings with up to 650 lbs door weight.

2.05 FLUSH BOLTS

A. Flushbolts: Lever extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.

1. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
2. Floor Bolts: Provide dustproof strike except at metal thresholds.

B. Manual Flushbolts: Provide lever extensions for top bolt at over-size doors.

C. Automatic Flushbolts: Automatically latch upon closing of door; automatic retraction of bolts when active leaf is opened.

- D. Coordinators: Provide on doors having closers and self-latching or automatic flushbolts to ensure that leaves close in proper order.
- E. Manufacturers:
 - 1. Ives, an Allegion brand; ____: www.allegion.com/us/#sle.
- F. Flush Bolts: Comply with BHMA A156.16, Grade 1.
 - 1. Flush Bolt Throw: 3/4 inch, minimum.
 - 2. Provides extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
 - a. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
 - 3. Provide dustproof floor strike for bolt into floor, except at metal thresholds.
 - 4. Self-Latching Flush Bolts: Automatically latch upon closing of door; manually retracted; located on inactive leaf of pair of doors.

2.06 EXIT DEVICES

- A. Manufacturers:
 - 1. Corbin Russwin, Sargent, or Yale; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.
 - 3. Von Duprin, an Allegion brand: www.allegion.com/us.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Exit Devices: Comply with BHMA A156.3, Grade 1.
 - 1. Lever design to match lockset trim.
 - 2. Provide cylinder with cylinder dogging or locking trim.
 - 3. Provide exit devices properly sized for door width and height.
 - 4. Provide strike as recommended by manufacturer for application indicated.

2.07 EXIT ALARMS

- A. Manufacturers:
 - 1. Alarm Lock, a subsidiary of NAPCO Security Technologies, Inc: www.alarmlock.com/#sle.
 - 2. BEST, dormakaba Group; Precision Arm-A-Door Series: www.bestaccess.com/#sle.
 - 3. Detex Corporation: www.detex.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Exit Alarms: Comply with BHMA A156.29.
 - 1. Include exit device integrated and used in conjunction with exit lock type(s), as indicated in Door Hardware Schedule.
 - 2. Arming and Disarming: By inside control key, allowing authorized entry or exit by means of an on-and-off key switch.
 - 3. Alarm: Manufacturer's standard piezo horn.
 - a. Loudness Rating: 80 dB.
 - b. Adjustable Allowable Bypass Time: Manufacturer's standard.
 - 1) Functionality: Factory-set and field-adjustable.
 - 2) Time Limit Settings: 5, 10, 20, and 40 minutes.
 - c. Low battery alert on applicable units.
 - 4. Housing: Manufacturer's standard, weatherized for exterior or high-humidity environment applications.
 - 5. Cover Plate Color: As indicated on drawings.
 - 6. Mounting: As indicated on drawings.

2.08 ELECTRIC STRIKES

- A. Manufacturers:

1. Adams Rite, HES, or Securitron; an Assa Abloy Group company:
www.assaabloydss.com.
 2. Substitutions: Not permitted.
- B. Electric Strikes: Comply with BHMA A156.31, Grade 1.
1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.
 2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.
 3. Provide transformer and rectifier as necessary for complete installation.

2.09 LOCK CYLINDERS

- A. Manufacturers:
1. STANLEY.
- B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
1. Provide high security mechanical type cylinders, Grade 1, with six-pin core in compliance with BHMA A156.30 or UL 437 at locations indicated.
 2. Provide cylinders from same manufacturer as locking device.
 3. Provide cams and/or tailpieces as required for locking devices.
 4. Within specific Door Sections, when provisions for lock cylinder are being referenced to this Section, provide specified lock cylinder and keyed to building keying system, unless otherwise indicated.

2.10 CYLINDRICAL LOCKS

- A. Manufacturers:
1. Schlage, an Allegion brand: www.allegion.com/us.
 2. Substitutions: Not permitted.
- B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
1. Bored Hole: 2-1/8 inch diameter.
 2. Latchbolt Throw: 1/2 inch, minimum.
 3. Backset: 2-3/4 inch unless otherwise indicated.
 4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
 - a. Finish: To match lock or latch.

2.11 MORTISE LOCKS

- A. Manufacturers:
1. Schlage, an Allegion brand: www.allegion.com/us.
 2. Substitutions: Not permitted.
- B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
1. Latchbolt Throw: 3/4 inch, minimum.
 2. Deadbolt Throw: 1 inch, minimum.
 3. Backset: 2-3/4 inch unless otherwise indicated.
 4.
 - a. Finish: To match lock or latch.

2.12 PUSH/PULL LOCKS/LATCHES

- A. Push/Pulls: Comply with BHMA A156.6
1. Provide push and pull on doors not specified to have lockset, latchset, exit device, or auxiliary lock.
 2. On solid doors, provide matching push plate and pull plate on opposite faces.
 3. On glazed storefront doors, provide matching push/pull bars on both faces.
 4. Provide Hospital type push/pull Latches

- B. Manufacturers:
 - 1. Basis of Design: TRIMCO
 - 2. Ives: www.allegion.com.
 - 3. TRIMCO: <https://trimcohardware.com/>
 - 4. Substitutions: Not permitted.
- C. Push/Pull Latches
 - 1. Backset: 2-3/4 inch unless otherwise indicated.
 - 2. Non handed, reversible mounting positions.
 - 3. Short throw angle, allowing the door to be opened with an easy push or pull action, even when hands are not free.
 - 4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
 - a. Finish: To match lock or latch.

2.13 DOOR PULLS AND PUSH PLATES

- A. Manufacturers:
 - 1. Ives: www.allegion.com.
 - 2. Trimco: www.trimcohardware.com.
 - 3. Substitutions: Not permitted.
- B. Door Pulls and Push Plates: Comply with BHMA A156.6.
 - 1. Pull Type: Straight, unless otherwise indicated.
 - 2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
 - a. Edges: Beveled, unless otherwise indicated.
 - 3. Material: Aluminum, unless otherwise indicated.

2.14 DOOR PULLS AND PUSH BARS

- A. Manufacturers:
 - 1. Ives: www.allegion.com.
 - 2. Trimco: www.trimcohardware.com.
 - 3. Substitutions: Not permitted.
- B. Door Pulls and Push Bars: Comply with BHMA A156.6.
 - 1. Bar Type: Bar set, unless otherwise indicated.
 - 2. Material: Stainless steel, unless otherwise indicated.

2.15 COORDINATORS

- A. Manufacturers:
 - 1. Ives, an Allegion brand; ____: www.allegion.com/us/#sle.
 - 2. Trimco; ____: www.trimcohardware.com/#sle.
- B. Coordinators: Provide on doors having closers and self-latching or automatic flush bolts to ensure that inactive door leaf closes before active door leaf.
 - 1. Type: Bar, unless otherwise indicated.
 - 2. Material: Aluminum, unless otherwise indicated.
 - 3. Ensure that coordination of other door hardware affected by placement of coordinators and carry bar is applied properly for completely operable installation.

2.16 CLOSERS

- A. Manufacturers; Surface Mounted:
 - 1. Sargent: <https://www.sargentlock.com/> .
- B. Closers: Comply with BHMA A156.4, Grade 1.
 - 1. Type: Surface mounted to door.
 - 2. Provide door closer on each exterior door.
 - 3. At corridor entry doors, mount closer on room side of door.

4. At outswinging exterior doors, mount closer on interior side of door.

2.17 AUTOMATIC DOOR OPERATORS

- A. Manufacturers; Surface Mounted:
 1. Basis of Design: HORTON 7100.
 2. Substitutions: Not permitted.
- B. Automatic Door Operators; Surface Mounted
 1. At corridor entry doors, mount operator on room side of door unless otherwise shown.
 2. Wireless actuators: Recessed circular style. Mounted on each side of door. Verify final location with Architect.
 3. Receivers: Provide number of receivers necessary for complete operation and integration of electric locking systems, typically 2 or more.
 4. Control sequence for operators on doors with electric strikes and access control systems:
 - a. Interior actuator (ADA button): automatic door operator will swing open the door regardless of whether or not the electric strike is engaged (locked mode) when button is pressed. This will require the interior actuator receiver to act independently of the exterior actuator receiver to release the electric strike just prior to the operator engaging and opening the door.
 - b. Exterior actuator (ADA button): automatic door operator will only engage and open the door after an approved access badge is presented to the card reader and the electric strike is disengaged (unlocked mode).
 - c. Coordinate interface and operation with automatic door operator wiring installer.
 5. Control sequence for operators on doors with electric strikes:
 - a. Interior actuator (ADA button): automatic door operator will swing open the door regardless of whether or not the electric strike is engaged (locked mode) when button is pressed. This will require the interior actuator receiver to act independently of the exterior actuator receiver to release the electric strike just prior to the operator engaging and opening the door.
 - b. Exterior actuator (ADA button): automatic door operator will only engage and open the door if the mortise lock deadbolts is not thrown and the door is in the unlocked mode.
 - c. Coordinate interface and operation with automatic door operator wiring installer

2.18 OVERHEAD STOPS AND HOLDERS

- A. Manufacturers:
 1. Rixson or Sargent; an Assa Abloy Group company: www.assaabloydss.com.
 2. Glynn-Johnson, an Allegion brand: www.allegion.com/us.
 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Overhead Stops and Holders (Door Checks): Comply with BHMA A156.8, Grade 1.

2.19 PROTECTION PLATES

- A. Manufacturers:
 1. Ives, an Allegion brand: www.allegion.com/us.
 2. Trimco: www.trimcohardware.com.
 3. Substitutions: Not permitted.
- B. Protection Plates: Comply with BHMA A156.6.
- C. Metal Properties: Stainless steel.
 1. Metal, Heavy Duty: Thickness 0.062 inch, minimum.
- D. Edges: Beveled, on four sides unless otherwise indicated.

- E. Fasteners: Countersunk screw fasteners.

2.20 KICK PLATES

- A. Manufacturers:
 - 1. Ives, an Allegion brand: www.allegion.com/us.
 - 2. Trimco: www.trimcohardware.com.
 - 3. Substitutions: Not permitted.
- B. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
 - 1. Size: 10 inch high by 2 inch less door width (LDW) on push side of door.

2.21 WALL STOPS

- A. Manufacturers:
 - 1. Ives, an Allegion brand: www.allegion.com/us.
 - 2. Trimco: www.trimcohardware.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 - 1. Provide wall stops to prevent damage to wall surface upon opening door.
 - 2. Type: Bumper, concave, wall stop.
 - 3. Material: Stainless steel housing with rubber insert.
 - 4. If wall stops are not practical, due to configuration of room or furnishings, provide overhead stop.

2.22 THRESHOLDS

- A. Manufacturers:
 - 1. Pemko; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. MCKINNEY: <https://mckinneydoor.com/>.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Thresholds: Comply with BHMA A156.21.
 - 1. Provide threshold at each exterior door, unless otherwise indicated.
 - 2. Type: Interlocking.
 - 3. Material: Aluminum.
 - 4. Threshold Surface: Fluted horizontal grooves across full width.
 - 5. Field cut threshold to profile of frame and width of door sill for tight fit.
 - 6. Provide non-corroding fasteners at exterior locations.

2.23 WEATHERSTRIPPING AND GASKETING

- A. Manufacturers:
 - 1. Pemko; an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Ives, an Allegion brand: www.allegion.com/us.
 - 3. MCKINNEY: <https://mckinneydoor.com/>.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
 - 1. Head and Jamb Type: Adjustable.
 - 2. Door Sweep Type: Encased in retainer.
 - 3. Material: Aluminum, with brush weatherstripping.
 - 4. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
 - 5. Provide door bottom sweep on each exterior door, unless otherwise indicated.

2.24 COAT HOOKS

- A. Manufacturers:

1. Ives, an Allegion brand: www.allegion.com/us.
 2. Rockwood; an Assa Abloy Group company: www.assaabloydss.com.
 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Coat Hooks: Provide on room side of door, screw fastened.
1. Material: Brass.

2.25 SILENCERS

- A. Manufacturers:
1. Ives, an Allegion brand: www.allegion.com/us.
 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Silencers: Provide at equal locations on door frames without seals or gaskets to mute sound of door's impact upon closing.
1. Single Door: Provide three on strike jamb of frame.
 2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
 3. Material: Rubber, gray color.

2.26 FIRE DEPARTMENT LOCK BOX

- A. Manufacturers:
1. Knox Company; Knox-Box Rapid Entry System, _____: www.knoxbox.com/#sle.
 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Fire Department Lock Box:
1. Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
 2. Capacity: Holds 10 keys.
 3. Finish: Manufacturer's standard dark bronze.

2.27 FINISHES

- A. Finishes: Identified in Section 08 0671 - Door Hardware Schedule.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.
- B. Verify that electric power is available to power operated devices and of correct characteristics.

3.02 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Do not install surface mounted items until application of finishes to substrate are fully completed.
- D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
1. For Steel Doors and Frames: Install in compliance with DHI (LOCS) recommendations.
 2. For Wood Doors: Install in compliance with DHI WDHS.3 recommendations.
- E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.
1. See Section 07 9200 for additional requirements.

3.03 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Section 01 4000 - Quality Requirements.
- B. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.04 ADJUSTING

- A. Adjust work under provisions of Section 01 7000 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.
- D. Test and adjust all Locks and Latches, including Lock Keyways for smooth and easy operation.

3.05 CLEANING

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

- A. Protect finished Work under provisions of Section 01 7000 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

3.07 SCHEDULE - ATTACHED IN SECTION 08 7110

END OF SECTION

DOOR HARDWARE SCHEDULE

<u>PRODUCT</u>	<u>MANUFACTURER SPECIFIED</u>	<u>APPROVED EQUAL</u>
BUTTS	STANLEY	MCKINNEY
POWER TRANSFER	VON DUPRIN	NONE
LOCKSETS	SCHLAGE	NONE
PANICS / MULLIONS	SARGENT	NONE
ELECTRIC STRIKES	HES	NONE
CLOSERS	SARGENT	NONE
OVERHEAD STOPS	GLYNN JOHNSON	SARGENT
PULLS	TRIMCO	IVES
KICKPLATES	IVES	TRIMCO
STOPS	IVES	NONE
THRESHOLDS	PEMKO	MCKINNEY
SWEEPS	PEMKO	MCKINNEY
GASKET	STEELCRAFT	PEMKO

GROUP #1

DOORS # 100A, 102

2 EA	CONTINUOUS HINGE BY DOOR SUPPLIER		
2 EA	POWER TRANSFER EPT10	ALUM	VON DUPRIN
1 EA	PANIC 55-56-8504F L/C LESS PULL	630	SARGENT
1 EA	PANIC 55-56-8510F	630	SARGENT
2 EA	PULL 1191-3	630	TRIMCO
1 EA	MULLION L980 L/C		SARGENT
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CYLINDER 30-008 X B520-296 "C" 114	626	SCHLAGE
1 EA	CLOSER 281 CPS	EN	SARGENT
1 EA	DROP PLATE 281 D	EN	SARGENT
1 EA	SPACER 581-2	EN	SARGENT
1 EA	AUTO OPERATOR/ACTUATORS BY DOOR SUPPLIER HORTON 7100		
POWER SUPPLY / CARD READER BY SECURITY SECTION			
BALANCE OF HARDWARE BY DOOR SUPPLIER			

GROUP #2

DOORS # 100B

2 EA	CONTINUOUS HINGE BY DOOR SUPPLIER		
2 EA	POWER TRANSFER EPT10	ALUM	VON DUPRIN
1 EA	PANIC 55-56-8504F L/C LESS PULL	630	SARGENT
1 EA	PANIC 55-56-8510F	630	SARGENT
2 EA	PULL 1191-3	630	TRIMCO
1 EA	MULLION L980 L/C		SARGENT
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CYLINDER 30-008 X B520-296 "C" 114	626	SCHLAGE
1 EA	CLOSER 281 CPS	EN	SARGENT
1 EA	DROP PLATE 281 D	EN	SARGENT
1 EA	SPACER 581-2	EN	SARGENT
1 EA	PUSH BUTTON (RECEPTION) 660PB		SCHLAGE
1 EA	AUTO OPERATOR/ACTUATORS BY DOOR SUPPLIER HORTON 7100		
POWER SUPPLY / CARD READER BY SECURITY SECTION			
BALANCE OF HARDWARE BY DOOR SUPPLIER			

GROUP #3
DOORS # 100C

1 EA	CONTINUOUS HINGE BY DOOR SUPPLIER		
1 EA	POWER TRANSFER EPT10	ALUM	VON DUPRIN
1 EA	PANIC 55-56-8504F L/C LESS PULL	630	SARGENT
1 EA	PULL 1191-3	630	TRIMCO
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CLOSER 1431 CPS	EN	SARGENT
1 EA	DROP PLATE 1431 D	EN	SARGENT
1 EA	SPACER 581-2	EN	SARGENT
POWER SUPPLY / CARD READER BY SECURITY SECTION			
BALANCE OF HARDWARE BY DOOR SUPPLIER			

GROUP #4
DOORS #103, 106, 200

1 EA	CONTINUOUS HINGE BY DOOR SUPPLIER		
1 EA	POWER TRANSFER EPT10	ALUM	VON DUPRIN
1 EA	PANIC 55-56-8504F L/C LESS PULL	630	SARGENT
1 EA	PULL 1191-3	630	TRIMCO
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CLOSER 281 CPS	EN	SARGENT
1 EA	DROP PLATE 281 D	EN	SARGENT
1 EA	SPACER 581-2	EN	SARGENT
POWER SUPPLY / CARD READER BY SECURITY SECTION			
BALANCE OF HARDWARE BY DOOR SUPPLIER			

GROUP #5
DOORS #110, 111, 112, 113, 114, 115, 118, 119, 201, 207, 208

3 EA	BUTTS FBB168 4 ½ X 4 ½	652	STANLEY
1 EA	LOCKSET ND50PD RHO "C"	626	SCHLAGE
1 EA	WALLSTOP WS407CCV	630	IVES
1 SET	GASKET S44		PEMCO

GROUP #6

DOORS # 116, 168, 169, 170

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET L9496P 06A X 09-509 L583-363 "C"	626	SCHLAGE
1 EA	CLOSER 1431 RO	EN	SARGENT
1 EA	WALLSTOP WS407CCV	630	IVES
1 SET	GASKET S44		PEMKO

GROUP #7

DOORS # 202

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET L9496P 06A X 09-509 L583-363 "C"	626	SCHLAGE
1 EA	WALLSTOP WS407CCV	630	IVES
1 SET	GASKET S44		PEMKO

GROUP #8

DOORS # 117

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	WALLSTOP WS407CCV	630	IVES
1 SET	GASKET S44		PEMKO
POWER SUPPLY / CARD READER BY SECURITY SECTION			

GROUP #9

DOORS # 121, 129, 134, 139, 144, 146, 155A, 155B, 156, 163

6 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
2 EA	FLUSHBOLT FB458	626	IVES
1 EA	OVERHEAD STOP 454S	630	GLYNN JOHNSON
2 EA	SILENCER SR64	GREY	IVES

GROUP #10

DOORS # 125A, 125B, 127A, 127B, 130A, 130B, 132A, 132B, 135A, 135B, 137A, 137B, 140A, 140B, 142A, 142B, 157, 159A, 159B, 161A, 161B, 164A, 164B, 204, 205, 209

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	CLOSER 1431 RO	EN	SAR
1 EA	OVERHEAD STOP 454S	630	GLYNN JOHNSON
1 SET	GASKET S44		PEMKO
POWER SUPPLY / CARD READER BY SECURITY SECTION			

GROUP #11

DOORS # 125C, 125D, 127C, 127D, 130C, 130D, 132C, 132D, 135C, 135D, 137C, 137D, 140C, 140D, 142C, 142D, 159C, 159D, 161C, 161D, 164C, 164D

3 EA	BUTTS FBB168 4.5 X 4.5 NRP	652	STANLEY
1 EA	PANIC 8804F LD L/C LESS PULL	630	SARGENT
1 EA	PULL 1191-3	630	TRIMCO
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CLOSER 281 CPS	EN	SARGENT
1 EA	THRESHOLD 276A	ALUM	PEMKO
1 EA	DOOR SWEEP 315CN	ALUM	PEMKO
1 EA	RAIN DRIP 346C	ALUM	PEMKO
1 SET	GASKET PS074	BLK	STEELCRAFT

GROUP #12

DOORS # 126A, 126B, 128A, 128B, 131A, 131B, 133A, 133B, 136A, 136B, 138A, 138B, 141A, 141B, 143A, 143B, 158, 160A, 160B, 162A, 162B, 165A, 165B

2 EA	BUTTS FBB179 4.5 X 4.5	652	STANLEY
1 EA	PASSAGE ND10 RHO	626	SCHLAGE
1 EA	WALLSTOP WS407CCV	630	IVES
2 EA	SILENCER SR64	GRAY	IVES

GROUP #13
DOORS # 145A

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	CLOSER 1431 H	EN	SARGENT
1 EA	KICKPLATE 8400 10 X 34	630	IVES
1 EA	WALLSTOP WS407CCV	630	IVES
3 EA	SILENCER SR64	GRAY	IVES

GROUP #14
DOORS 166, 203

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	WALLSTOP WS407CCV	630	IVES
3 EA	SILENCER SR64	GRAY	IVES

GROUP #15
DOORS # 145B

3 EA	BUTTS FBB168 4.5 X 4.5 NRP	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	CLOSER 281 CPSH	EN	SARGENT
1 EA	KICKPLATE 8400 10 X 34	630	IVES
1 EA	THRESHOLD 276A	ALUM	PEMKO
1 EA	DOOR SWEEP 315CN	ALUM	PEMKO
1 EA	RAIN DRIP 346C	ALUM	PEMKO
1 SET	GASKET PS074	BLK	STEELCRAFT

GROUP #16
DOORS # 149, 167

3 EA	BUTTS FBB168 4.5 X 4.5 NRP	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	OVERHEAD STOP 454S	630	GLYNN JOHNSON
1 EA	THRESHOLD 276A	ALUM	PEMKO
1 EA	DOOR SWEEP 315CN	ALUM	PEMKO
1 EA	RAIN DRIP 346C	ALUM	PEMKO
1 SET	GASKET PS074	BLK	STEELCRAFT

GROUP #17
DOORS # 147A

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	CLOSER 1431 RO	EN	SAR
1 EA	KICKPLATE 8400 10 X 34	630	IVES
1 EA	WALLSTOP WS407CCV	630	IVES
1 SET	GASKET S44		PEMKO
POWER SUPPLY / CARD READER BY SECURITY SECTION			

GROUP #18
DOORS # 147B

3 EA	BUTTS FBB168 4.5 X 4.5 NRP	652	STANLEY
1 EA	LOCKSET ND80PD RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	CLOSER 281 CPSH	EN	SAR
1 EA	KICKPLATE 8400 10 X 34	630	IVES
1 EA	THRESHOLD 276A	ALUM	PEMKO
1 EA	DOOR SWEEP 315CN	ALUM	PEMKO
1 EA	RAIN DRIP 346C	ALUM	PEMKO
1 SET	GASKET PS074	BLK	STEELCRAFT

GROUP #19
DOORS # 148

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND70P RHO "C"	626	SCHLAGE
1 EA	WALLSTOP WS407CCV	630	IVES
1 EA	KICKPLATE 8400 10 X 34	630	IVES
3 EA	SILENCER SR64	GRAY	IVES

GROUP #20
DOORS # 172

3 EA	BUTTS FBB168 4.5 X 4.5	652	STANLEY
1 EA	LOCKSET ND80P RHO "C"	626	SCHLAGE
1 EA	ELECTRIC STRIKE 1006 CLB	630	HES
1 EA	SMART PAC 2005 M3		HES
1 EA	WALLSTOP WS407CCV	630	IVES
3 EA	SILENCER SR64	GRAY	IVES

GROUP #21
DOORS # 150

3 EA	BUTTS FBB168 4.5 X 4.5 NRP	652	STANLEY
1 EA	PANIC 8804F L/C LESS PULL	630	SARGENT
1 EA	PULL 1191-3	630	TRIMCO
1 EA	CYLINDER 20-057 "C"	626	SCHLAGE
1 EA	CLOSER 281 CPS	EN	SARGENT
1 EA	THRESHOLD 276A	ALUM	PEMKO
1 EA	DOOR SWEEP 315CN	ALUM	PEMKO
1 EA	RAIN DRIP 346C	ALUM	PEMKO
1 SET	GASKET PS074	BLK	STEELCRAFT

GROUP #22
DOORS # G001, G002, G003, G004, G005 (GATE)

HARDWARE TO BE DETERMINED

SECTION 08 8000 GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass.
- B. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 08 8300 - Mirrors: Frameless mirrors.
- B. Section 10 2800 - Toilet, Bath, and Laundry Accessories: Framed mirrors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ASTM C1036 - Standard Specification for Flat Glass; 2025.
- C. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2025.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- E. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.
- F. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- G. GANA (GM) - GANA Glazing Manual; 2008.
- H. GANA (SM) - GANA Sealant Manual; 2008.
- I. OSSC - Oregon Structural Specialty Code - Latest edition

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Samples: Submit two samples 12 by 12 inch in size of glass units, showing coloration and design.
- D. Certificates: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Certificate: Certify that sealed insulated glass meets or exceeds specified requirements.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual for glazing installation methods. Maintain one copy on site.
- B. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods. Maintain one copy on site.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.
- D. Safety glazing to comply with OSSC requirements.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 50 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Sealed Insulating Glass Units: Provide a five (5) year manufacturer's warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

PART 2 PRODUCTS

2.01 INSULATING GLASS UNITS

- A. Type 1 - Sealed Insulating Glass Units
 - 1. Application(s): North facing exterior glazing.
 - 2. Outboard Lite: PPG Starphire, Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: PPG Solarban 60 Low-E type, on #2 surface.
 - 3. Spacer: 1/2" Aluminum poly
 - 4. Inboard Lite: PPG Starphire, Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 5. Total Thickness: 1 inch.
 - 6. Total Visible Light Transmittance: 74 percent, nominal.
 - 7. Total Solar Heat Gain Coefficient: 40 percent, nominal.
- B. Type 2 - Sealed Insulating Glass Units
 - 1. Application(s): South facing exterior glazing.
 - 2. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: PPG Sungate ??? Low-E type, on #2 surface.
 - c. <<Sungate 500 discontinued 10/14; try Sungate 400>>
 - 3. Spacer: 1/2" Aluminum poly
 - 4. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 5. Total Thickness: 1 inch.
 - 6. Total Visible Light Transmittance: 74 percent, nominal.
 - 7. Total Solar Heat Gain Coefficient: 62 percent, nominal.
- C. Type 3 - Sealed Insulating Glass Units
 - 1. Application(s): East and west facing exterior glazing.
 - 2. Outboard Lite: PPG Starphire, Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: PPG Solarban 70XL Low-E type, on #2 surface.
 - 3. Spacer: 1/2" Aluminum poly
 - 4. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 5. Total Thickness: 1 inch.
- D. Type 4 - Single Vision Glazing
 - 1. Application(s): All interior glass unless otherwise noted.
 - 2. Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: none
- E. Type __ - Single Vision Glazing
 - 1. Application(s): Interior glazing at frameless glass wall systems unless otherwise noted.
 - 2. Lite: Fully tempered float glass, 1/2 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: none

- F. Type ___ - Sealed Insulated Glass Units
1. Application(s): Interior glass where noted on drawings.
 2. Inboard and Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 3. Spacer: 1/2" Aluminum poly
 4. Total Thickness: 1 inch.
- G. Provide Tempered Safety Glass within any of the above Glazing Types where shown on drawings or where required by OSSC.

2.02 EXTERIOR GLAZING ASSEMBLIES

- A. Performance Criteria: Select type and thickness of glass to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 3. Glass thicknesses listed are minimum.

2.03 GLASS MATERIALS

- A. Float Glass Manufacturers:
1. AGC Flat Glass North America, Inc: www.na.agc-flatglass.com.
 2. Cardinal Glass Industries: www.cardinalcorp.com
 3. Guardian Industries Corp: www.sunguardglass.com.
 4. Pilkington North America Inc: www.pilkington.com/na.
 5. PPG Industries, Inc: www.ppgideascales.com.
 6. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. Float Glass: Provide float glass based glazing unless noted otherwise.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality-Q3.
 2. Safety glazing shall comply with CPSC 16 CFR 1201.
 3. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and Kind FT.
 - a. Heat strengthen glazing exposed to high temperatures caused by the reflection and/or absorption of solar heat, and/or when recommended by the glazing manufacturer, and/or when required by other items of this specification section.
 - b. Heat temper glazing when required by other items of this specification section, and/or the drawings, and/or the building code.
 - c. Heat treating process should minimize Roller Wave Distortion.
 - d. Orient the glass in the heat treating oven so that the roller waves are parallel to the ground plane of the building.
 4. Thicknesses: As indicated; for exterior glazing comply with requirements indicated for wind load design regardless of thickness indicated.

2.04 SEALED INSULATING GLASS UNITS

- A. Manufacturers:
1. Any of the manufacturers specified for float glass.
 2. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. Sealed Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 2. Edge Spacers: Aluminum, bent and soldered corners.

3. Edge Seal: Glass to elastomer.
4. Purge interpane space with dry hermetic air.

2.05 GLAZING COMPOUNDS

- A. As recommended by the glazing manufacturer for particular applications.

2.06 GLAZING ACCESSORIES

- A. As recommended by the glazing manufacturer for particular applications.
- B. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness; ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; hardness range of 5 to 30 cured Shore A durometer; coiled on release paper; black color.
- D. Glazing Splines: Resilient polyvinyl chloride extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; _____ color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.
- D. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.
- E. Install sealants in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Install in strict accordance with manufacturer's instructions and FGMA Glazing Manual.

3.04 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

- A. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

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

- F. Knife trim protruding tape.

3.06 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.07 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

END OF SECTION

**SECTION 08 8723
DECORATIVE GLAZING FILMS**

PART 1 - GENERAL

1.01 SUMMARY

- A. Decorative Glazing Films.

1.02 REFERENCE STANDARDS

- A. ASTM E-84, "Test Method for Surface Burning Characteristics of Building Materials".
- B. ASTM E 903, "Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres."
- C. ASTM D 3330, "Standard Test Methods for Peel-Adhesion at 180 Degree Angle".

1.03 PERFORMANCE REQUIREMENTS

- A. Thermal and Optical Performance Properties: Provide glazing films with performance properties specified (on 1/8 inch clear glass) based on manufacturer's published test data, as determined according to procedures indicated in ASHRAE Handbook of Fundamentals:
 - 1. Performance requirements vary by product selected and will be identified by Architect from color selection samples submitted by the manufacturer.
- B. Surface Burning Characteristics: Provide films that have Flame Spread Index of 0 and Smoke Development Index of 30 or less when tested in accordance to ASTM E 84.
- C. Minimum Peel Strength: 2,000 grams per inch, average of two specimens when tested in accordance with ASTM D 3330.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples for Color Selection: Manufacturer's standard sample sets showing the full range of colors available for each type of product indicated.
- C. Samples for Verification: 12-inch square samples of each glazing film, of each product color specified.
- D. Closeout Submittals: Upon completion of the Work, submit the following;
 - 1. Executed warranty.
 - 2. Maintenance (cleaning) and replacement instructions.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Engage a firm experienced in manufacturing systems similar to those indicated for this Project and meeting the standards of the International Standards Organization (ISO), ISO 9001 Quality Assurance in Production and Installation.
- B. Installer Qualifications: Engage an experienced installer certified, licensed, or otherwise qualified by film manufacturer as having the necessary experience, staff, and training to install manufacturer's products according to specified requirements.
- C. Mockups: Apply glazing films in locations as directed to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.
 - 1. Obtain approval of field samples before continuing with remainder of installation.
 - 2. Maintain field samples during remainder of installation in an undisturbed condition as a standard for judging the completed Work.
 - 3. Approved field samples may become part of the completed Work.

- D. Pre-installation Conference: Before installing glazing films, conduct conference at Project site. Conduct pre-installation conference in conjunction with installation of mockup.
1. Meet with Owner, Architect, glazing film Installer and glazing film manufacturer's representative.
 2. Review methods and procedures related to installation, including manufacturer's written instructions.
 3. Examine substrate conditions for compliance with requirements.
 4. Review temporary protection measures required during and after installation.
 5. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing films according to manufacturer's written instructions and as needed to prevent damage condensation, temperature changes, direct exposure to sun, or other causes.

1.07 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with film installation when ambient and substrate temperature conditions are outside limits permitted by manufacturer and when glass substrates are wet from frost, condensation, or other causes.

1.08 WARRANTY

- A. Manufacturer's Warranty: Fully executed warranty, written in favor of the Owner, agreeing to replace films that deteriorate as defined in "Definitions" Article, within 5 years from date of original installation.

PART 2 - PRODUCTS

2.01 GLAZING FILM

- A. Manufacturers:
1. CPFilms Inc.; LLumar Films. www.llumar.com
 2. 3M Window Film: www.3m.com/us/arch_construct/scpd/windowfilm
 3. CPFilms, Inc: www.cpfindusprod.com www.cpfindusprod.com
 4. Madico, Inc: www.madico.com.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Product Description: Single or multi-layered decorative film products, applied to interior glass surfaces, consisting of from outboard surface to inboard surface:
1. Similar to "Fasara", by 3M.
 2. Removable release liner.
 3. Pressure sensitive adhesive with integral ultraviolet absorbers.
 4. Clear, dyed, or printed pattern layer of polyester film.
 5. Possible layer of metalized or sputtered polyester film.
 6. Possible scratch resistant coating.
- C. Pattern and Color: Selected by Architect from Manufacturer's standard color and pattern with the following characteristics.
1. Type GF-1 - Sight obscuring translucent
 2. Type GF-2 - Semitransparent pattern
- D. Pattern: Full sheet frosted glass film with four, 3/4 inch wide horizontal clear bands die-cut within the sheet, as shown.
- E. Pattern: Full sheet frosted glass film with die-cut design. Entire background to be frosted with the text being completely see-through; as indicated on drawings.

2.02 GLAZING FILM ACCESSORIES

- A. General: Provide products complying with requirements of glazing film manufacturer for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Adhesive: Pressure Sensitive acrylic adhesive system, compliant with project's VOC requirements.
- C. Cleaners, Primers, and Sealers: Types recommended by glazing film manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine glass and surrounding adjacent surfaces for conditions affecting installation.
 - 1. Report conditions that may adversely effect installation. In report, include description of any glass that is broken, chipped, cracked, abraded, or damaged in any way.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning of installation means acceptance of conditions.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Immediately before beginning installation of films, clean glass surfaces of substances that could impair glazing film's bond, including mold, mildew, oil, grease, dirt and other foreign materials.
- C. Protect window frames and surrounding conditions from damage during installation.

3.03 INSTALLATION

- A. General: Comply with glazing film manufacturers' written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
 - 1. Install film continuously, but not necessarily in one continuous length. Install with no gaps or overlaps.
 - 2. If seamed, install with no gaps or overlaps. Install seams vertical and plumb. No horizontal seams allowed.
 - 3. Do not remove release liner from film until just before each piece of film is cut and ready for installation.
 - 4. Install film with mounting solution and custom cut to the glass with neat, square corners and edges to within 1/8 inch of the window frame.
 - 5. Remove air bubbles, wrinkles, blisters, and other defects.
- B. After installation, view film from a distance of 10 feet against a bright uniform sky or background. Film shall appear uniform in appearance with no visible streaks, banding, thin spots or pinholes.
 - 1. If installed film does not meet this criteria, remove and replace with new film.

3.04 CLEANING

- A. Remove excess mounting solution at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended by glazing film manufacturer.
- C. Replace films that cannot be cleaned.

END OF SECTION

SECTION 08 9100 LOUVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Louvers, frames, and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 2001 - Masonry Veneer: adjacent wall assembly
- B. Section 07 4213 - Metal Wall Panels, adjacent wall material.
- C. Section 07 2500 - Weather Barriers: Sealing frames to water-resistive barrier installed on adjacent construction.
- D. Section 07 6200 - Sheet Metal Flashing and Trim.
- E. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- F. Section 09 9113 - Exterior Painting: Field painting.
- G. Section 23 3100 - HVAC Ducts and Casings: Ductwork attachment to louvers.
- H. Section 23 3101 - HVAC Ducts and Casing - Low Pressure

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. AMCA 511 - Certified Ratings Program Product Rating Manual for Air Control Devices; 2021.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data describing design characteristics, maximum recommended air velocity, design free area, materials and finishes.
- C. Shop Drawings: Indicate louver layout plan and elevations, opening and clearance dimensions, and tolerances; head, jamb and sill details; blade configuration, screens, blank-off areas required, and frames.
- D. Test Reports: Independent agency reports showing compliance with specified performance criteria.
 - 1. Test data indicating Class A performance at stated wind speed and rainfall performance requirements.

1.05 WARRANTY

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wall Louvers:
 - 1. Airolite Company, LLC: www.airolite.com.
 - 2. Construction Specialties: cs-group.com
 - 3. Pottorff: www.pottorff.com.
 - 4. Ruskin: www.ruskin.com.
 - 5. Greenheck: www.greenheck.com
 - 6. Substitutions: See Section 01 6000 - Product Requirements.

2.02 LOUVERS

- A. Louvers: Factory fabricated and assembled, complete with frame, mullions, and accessories; AMCA Certified in accordance with AMCA 511.
 - 1. Screens: Provide insect screens at intake louvers and bird screens at exhaust louvers.
- B. Stationary Louversat Masonry Veneer: Horizontal blade, extruded aluminum construction, with intermediate mullions matching frame.
 - 1. Free Area: 50 percent, minimum.
 - 2. Blades: V-shaped, sight-proof.
 - 3. Frame: 6 inches deep, channel profile; corner joints mitered and, with continuous recessed caulking channel each side.
 - 4. Aluminum Thickness: Frame 12 gauge, 0.0808 inch minimum; blades 12 gauge, 0.0808 inch minimum.
 - 5. Aluminum Finish: Powder coat, 100% resin flourpolymer coating, 1.5 to 3 mil thick; finish welded units after fabrication. Meet or exceed requirements of AAMA 2605-5.
 - 6. Color: Custom color as shown on Drawings.
 - 7. Basis of Design: Greenheck EHH-601 series
- C. Stationary Louversat Metal Wall Panels and Phenolic Wall Panels: Vertical blade, extruded aluminum construction.
 - 1. Free Area: 50 percent, minimum.
 - 2. Blades: V-shaped, 3 inch by 3 inch legs, sight-proof.
 - 3. Frame: 6 inches deep, channel profile; corner joints mitered.
 - a. Mounting Type: As indicated on drawings.
 - 4. Aluminum Thickness: Frame 12 gauge, 0.0808 inch minimum; blades 12 gauge, 0.0808 inch minimum.
 - 5. Aluminum Finish: Mill finish; finsih welded units after fabrication.
 - 6. Color: Custom color as shown on Drawings.
 - 7. Basis of Design: Greenheck EVH-602 series

2.03 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063-T5 Alloy.

2.04 FINISHES

- A. Superior Performing Organic Coatings System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch.
- B. Primer: Zinc chromate, alkyd type, or as recommended by manufacturer for compatibility with top coat system specified.
- C. Color: As indicated on drawings.

2.05 ACCESSORIES

- A. Blank-Off Panels: Aluminum face and back sheets, polyisocyanurate foam core, 2 inch thick where space allows, 1 inch thick elsewhere, painted black on exterior side; provide where duct connected to louver is smaller than louver frame, sealing off louver area outside duct. Thermal insulation value R-5 and R-10.
- B. Screens: Frame of same material as louver, with reinforced corners; removable, screw attached; installed on inside face of louver frame.
- C. Bird Screen: Interwoven wire mesh of steel, 14 gauge, 0.0641 inch diameter wire, 1/2 inch open weave, diagonal design.

- D. Insect Screen: 18 x 16 size aluminum mesh.
- E. Fasteners and Anchors: Stainless steel.
- F. Flashings: Of same material as louver frame, formed to required shape, single length in one piece per location.
- G. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install louver assembly in accordance with manufacturer's instructions.
- B. Install louvers level and plumb.
- C. Install flashings and align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.
- D. Secure louver frames in openings with concealed fasteners.
- E. Coordinate with installation of mechanical ductwork.
- F. Seal between louver, mechanical duct, and blank-off panel for air and water-tight construction.

3.02 ADJUSTING

- A. Adjust operable louvers for freedom of movement of control mechanism. Lubricate operating joints.

3.03 CLEANING

- A. Strip protective finish coverings.
- B. Clean surfaces and components.

END OF SECTION

**SECTION 09 0561
COMMON WORK RESULTS FOR FLOORING PREPARATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
 - 1. Polished Concrete
 - 2. Carpet tile.
 - 3. Resilient athletic flooring..
 - 4. Ceramic tile .
- B. Preparation of new concrete floor slabs for installation of carpet tile and resilient floor coverings.
- C. Testing of concrete floor slabs for moisture and alkalinity (pH).
- D. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
 - 1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
- E. Patching compound.
- F. Remedial floor coatings.

1.02 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Additional requirements relating to testing agencies and testing.
- B. Section 01 7419 - Construction Waste Management and Disposal: Handling of existing floor coverings removed.
- C. Section 03 3500 - Existing Concrete Floor Refinishing: Polished concrete finish.

1.03 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.
- B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete; 2020.
- C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2016a.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

1.05 SUBMITTALS

- A. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- B. Testing Agency's Report:
 - 1. Description of areas tested; include floor plans and photographs if helpful.
 - 2. Summary of conditions encountered.

3. Moisture and alkalinity (pH) test reports.
4. Copies of specified test methods.
5. Recommendations for remediation of unsatisfactory surfaces.
6. Product data for recommended remedial coating.
7. Submit report to Architect.
8. Submit report not more than two business days after conclusion of testing.

C. Adhesive Bond and Compatibility Test Report.

1.06 QUALITY ASSURANCE

- A. Moisture and alkalinity (pH) testing will be performed by an independent testing agency employed and paid by Owner.
- B. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
 1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
- C. Contractor's Responsibility Relating to Independent Agency Testing:
 1. Provide access for and cooperate with testing agency.
 2. Confirm date of start of testing at least 10 days prior to actual start.
 3. Allow at least 4 business days on site for testing agency activities.
 4. Achieve and maintain specified ambient conditions.
 5. Notify Owner when specified ambient conditions have been achieved and when testing will start.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

1.08 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
 2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
- B. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.

1. Use product recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 1. Preliminary cleaning.
 2. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
 3. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 4. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 5. Specified remediation, if required.
 6. Patching, smoothing, and leveling, as required.
 7. Other preparation specified.
 8. Adhesive bond and compatibility test.
 9. Protection.
- B. Remediations:
 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
 2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 PRELIMINARY CLEANING

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

3.03 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

3.04 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.05 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

3.06 ADHESIVE BOND AND COMPATIBILITY TESTING

- A. Comply with requirements and recommendations of floor covering manufacturer.

3.07 APPLICATION OF REMEDIAL FLOOR COATING

- A. Comply with requirements and recommendations of coating manufacturer.

3.08 APPLICATION OF REMEDIAL FLOOR TREATMENT

- A. Comply with requirements and recommendations of treatment manufacturer.

3.09 INSTALLATION OF REMEDIAL FLOOR SHEET MEMBRANE

- A. Install in accordance with sheet membrane manufacturer's instructions.

3.10 PROTECTION

- A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

**SECTION 09 2116
GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Resilient sound isolation clips.
- D. Acoustic insulation.
- E. Gypsum wallboard.
- F. Joint treatment and accessories.
- G. Acoustical sealant.
- H. Water-resistive barrier over exterior wall sheathing.
- I. Acoustic (sound-dampening) wall and ceiling board.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.
- C. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- D. Section 09 2216 - Non-Structural Metal Framing.
- E. Section 09 2613 - Gypsum Veneer Plaster
- F. Section 09 9600 - Painting: PVA primer/sealer on gypsum board.

1.03 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Framing - Nonstructural Members; 2015.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Amendment (2020).
- C. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.
- D. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.
- E. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- F. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- G. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- H. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- I. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board; 2004 (Reapproved 2020).
- J. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2018.
- K. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.

- L. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- M. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2020.
- N. 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; 2018.
- O. 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; 2020.
- P. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- Q. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2018.
- R. ASTM C1288 - Standard Specification for Fiber-Cement Interior Substrate Sheets; 2017.
- S. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2021.
- T. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- U. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels; 2019, with Editorial Revision (2020).
- V. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- W. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- X. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- Y. GA-216 - Application and Finishing of Gypsum Panel Products; 2021.
- Z. OSSC - Oregon Structural Specialty Code; latest edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of gypsum board assemblies with size, location, and installation of service utilities.
- B. Sequencing: Install service utilities in an orderly and expeditious manner.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- C. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum ___ years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions, Indicated as Sound-Rated: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC as indicated calculated in accordance with {rs\#1}, based on tests conducted in accordance with {rs\#2}.
- C. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions in accordance with ASCE 7 for Seismic Design Category D, E, or F and complying with the following:
 - 1. Local authorities having jurisdiction.

2.02 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich; ____: www.clarkdietrich.com/#sle.
 - 2. Jaimes Industries; ____: www.jaimesind.com/#sle.
 - 3. SCAFCO Corporation; ____: www.scafco.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- C. Non-structural Steel Framing for Application of Gypsum Board: See Section 09 2216.
- D. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
 - 1. Studs: C-shaped with knurled or embossed faces.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Resilient Furring Channels: Single leg configuration; 5/8 inch channel depth.
 - a. Products:
 - 1) Same manufacturer as other framing materials.
 - 2) ClarkDietrich; RC Deluxe Resilient Channel: www.clarkdietrich.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. Basis of Design for Acoustic Walls: PABCO Gypsum[<>]: www.pabcogypsum.com/#sle.
 - 2. American Gypsum: www.americangypsum.com.
 - 3. CertainTeed Corporation: www.certainteed.com/#sle.
 - 4. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 5. Gold Bond Building Products, LLC provided by National Gypsum Company: www.goldbondbuilding.com/#sle.
 - 6. USG Corporation: www.usg.com/#sle.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces, unless otherwise indicated.

2. Glass mat faced gypsum panels, as defined in ASTM C1658/C1658M, suitable for paint finish, of the same core type and thickness may be substituted for paper-faced board.
 3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 4. Thickness:
 - a. Vertical Surfaces: 1/2 inch.
 - b. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 5. Paper-Faced Products:
 - a. Pabco Gypsum
 - b. CertainTeed Corporation; Type C Drywall: www.certainteed.com/#sle.
 - c. CertainTeed Corporation; Type X Drywall: www.certainteed.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
 6. Mold Resistant Paper Faced Products:
 - a. Pabco Gypsum
 - b. CertainTeed Corporation; M2Tech 1/2" Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
 - c. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
 - d. USG Corporation; Sheetrock Brand UltraLight Panels Mold Tough 1/2 in. (12.7 mm): www.usg.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- C. Backing Board For Wet Areas: One of the following products:
1. Application: Surfaces behind wet areas including shower ceilings and Wet walls.
 2. Application: Horizontal surfaces behind tile in wet areas including countertops and sinks, drinking fountains, ice maker, water closet, urinal.
 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
 5. ASTM Cement-Based Board: Non-gypsum-based, cementitious board complying with ASTM C1288.
- D. Water-Resistant Gypsum Backing Board: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
1. Application: Vertical surfaces behind thinset tile, except in wet areas.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 3. Type: Type X, in locations indicated.
 4. Type X Thickness: 5/8 inch.
 5. Edges: Tapered.
- E. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
 2. Thickness: 5/8 inch inch.
 3. Edges: Tapered.
- F. Acoustical Sound Dampening Wall and Ceiling Board: Two layers of heavy paper-faced, high-density gypsum board separated by a viscoelastic polymer layer and capable of achieving STC rating of 50 or more in typical stud wall assemblies as calculated in accordance with ASTM E413 and when tested in accordance with ASTM E90.
1. Thickness: 1/2 inch.
 2. Long Edges: Tapered.

3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
4. Products:
5. PABCO: QUITEROCK : STC as indicated in wall assemblies

2.04 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: Formaldehyde Free Mineral Wool
 1. Basis of Design: Thermafiber SAFB(sound attenuation fire blanket)
 - a. Greenguard Gold Certified
 - b. Declare label Living Building Challenge Red-list Approved.
 - c. Density: 1inch thick:4pcf nominal.
 - d. Depth: Full depth of stud cavity.
 - 2.
- B. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3-1/2 inch.
 1. Certified by the Greenguard Environmental Institute under the Greenguard Standard for Low Emitting Products.
- C. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant meeting project's VOC limits; do not use solvent-based non-curing butyl sealant.
- D. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board; meeting project's VOC limits.
- E. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
 1. Types: As detailed or required for finished appearance.
 2. Special Shapes: In addition to conventional corner bead and control joints, provide L-bead at exposed panel edges.
- F. Reveals and Moldings:
 1. Expansion and Control Joints: Aluminum, similar to Fry Reglet DRM-50-50 2 piece.
 2. "F" Reveal Molding: Aluminum, 5/8 inch deep, 1/2 inch wide, similar to Fry Reglet DRMF - 625-50
- G. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
 2. Joint Compound: Drying type, vinyl-based, ready-mixed.
- H. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- I. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- J. Nails for Attachment to Wood Members: ASTM C514.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.
- B. Studs: Space studs at 16 inches on center.

1. Extend partition framing to structure where indicated and to ceiling in other locations.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Resilient Channels - install per manufacturer's installation instructions.
 1. Provide at 24' oc; install horizontally, Locate joints over framing members.
 2. Provide 2" wide perimeter gypsum board strips directly over framing at perimeter of wall and openings within the wall. Butt resilient channels into gyp board strips.
 3. Provide acoustical sealant at framing member prior to install the 2" wide gyp board strips, and on 2" wide gyp board strips prior to installing final layer of gyp board.
- B. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
 1. Install insulation in accordance with approved submittals, manufacturer's written recommendations, and guidelines.
 2. Interior Stud Cavity: Friction-fit SAFB securely between studs. Butt ends of blankets closely together and fill all voids.
 3. Creased SAFB: Using SAFB 1 inch wider than regular blankets, bow the blankets slightly to fit into stud cavity. Slit the blankets vertically 1inch deep with a utility knife down the center.
 4. Floor-Ceiling: Friction-fit SAFB securely between floor joints.
 5. Ceiling Overlayment: Lay SAFB over ceiling panels extending 48 inches beyond all partitions. Tightly fit around all hangers, obstructions, and penetrations.
 6. Do not over-compress insulation to fit into spaces.
 7. Fit insulation closely around electrical boxes, pipes, ducts, frames, and other objects in or passing through insulation.
 8. Install products in proper relationship with each other and adjacent construction.
 9. Repair damage to adjacent materials caused by insulation installation.
 10. Protect installed products from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.
 11. Protect installed products and accessories from damage during construction.
- C. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 1. Place one bead continuously on substrate before installation of perimeter framing members.
 2. Seal gypsum to top and bottom plate
 3. Place continuous bead at perimeter of each layer of gypsum board.
 4. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

- D. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- E. Cementitious Backing Board: Install over wood framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- F. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
 - 1. Single-Layer Applications: Screw attachment.
 - 2. Double-Layer Application: Install base layer using screws or nails. Install face layer using screws.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.
- D. Reveal Moulding: Install in patterns as shown on drawings according to manufacturer's instructions, directly to wall framing, or base layer of wall board in multiple layer applications. Cutting in reveal molding after wall board installation is not acceptable.
- E. Wall and Ceiling Mounted Access Hatches: Coordinate size, location and number of access hatches shown to be provided in other specification sections or on the drawings. Install these access hatches in gypsum board walls and ceilings in accordance with manufacturer's instructions flat and smooth in wall and ceiling surfaces.

3.06 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings as indicated on drawings & behind Mural wall graphic.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 3: Walls to receive textured wall finish.
 - 4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 5. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
- D. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.07 TOLERANCES

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

3.08 PROTECTION

- A. Protect installed gypsum board assemblies from subsequent construction operations.

END OF SECTION

SECTION 09 3000 TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Cementitious backer board as tile substrate.
- D. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.
- B. Section 22 4000 - Plumbing Fixtures:

1.03 REFERENCE STANDARDS

- A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2024.
- B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017.
- C. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 2017.
- D. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2021).
- E. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship; 2019.
- F. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2019.
- G. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 2021.
- H. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 1999 (Reaffirmed 2019).
- I. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2019).
- J. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reaffirmed 2019).
- K. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017.
- L. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.
- M. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2019).
- N. 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).

- O. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.
- P. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.
- Q. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.
- R. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2023.
- S. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.
- T. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2023.
- U. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2024).
- V. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018.
- W. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2021.

1.04 ADMINISTRATIVE REQUIREMENTS

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

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Installer's Qualification Statement:
- F. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Tile: 10 square feet of each size, color, and surface finish combination.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of and ANSI A108/A118/A136 and TCNA (HB) on site.
- B. Waterproofing and shower pan assembly to be sourced from single manufacturer to provide a warranted assembly

- C. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
- D. Installer Qualifications:
 - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

- A. Manufacturers:
 - 1. Fireclay Tile: www.fireclaytile.com
 - 2. Florida Tile; www.floridatile.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Glazed Ceramic Wall Tile, Type T-2 & T-3:
 - 1. Moisture Absorption: 3.0 to 7.0 percent as tested in accordance with ASTM C373.
 - 2. Size: 3 by 9 inch, nominal.
 - 3. Thickness: 5/16 inch
 - 4. Surface Finish: As indicated on drawings.
 - 5. Color(s): As indicated on drawings.
 - 6. Pattern: As indicated on drawings.
 - 7. Installation Pattern: Vertical Stacked
 - 8. Grout Joint: 3/16 inch
 - 9. Products:
 - a. AMERICAN OLEAN,
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Porcelain Tile, Type T-1
 - 1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
 - 2. Size: 12 by 24 inch, nominal.
 - 3. Thickness: 9 mm
 - 4. Edges: Rectified.
 - 5. Color(s): As indicated on drawings.
 - 6. Pattern: As indicated on drawings.
 - 7. Installation Pattern: 33% max Offset (Brick)
 - 8. Grout Joint: 1/8 inch min.
 - 9. Products:
 - a. EMSEER TILE, UPTOWN
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Porcelain Tile Mosaic, Type T-2
 - 1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
 - 2. Size: Sheet, 12 by 12 inch, nominal.
 - 3. Color(s): As indicated on drawings.
 - 4. Pattern: As indicated on drawings.
 - 5. Products:

- a. Serendipity by Florida Tile, www.floridatile.com.
- b. Substitutions: See Section 01 6000 - Product Requirements.

2.02 TRIM AND ACCESSORIES

- A. Pre-Formed Accessories To Be Covered with Tile: High density expanded polystyrene with ANSI A118.10 waterproofing finish or membrane.
 - 1. Products:
 - a. LATICRETE International, Inc; LATICRETE HYDRO BAN Pre-Sloped Shower Systems: www.laticrete.com/#sle.
- B. Porcelain Base, Type B-2: Matching cove base shapes in size indicated on drawings.
- C. Porcelain Bullnose, Type B-3: Matching bullnose tile base in size indicated on drawing.
 - 1. Manufacturers: Same as for tile
- D. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
 - 1. Applications:
 - a. Open edges of wall tile, and where shown on drawings: similar to Schluter - QUADec
 - b. Open edges of floor tile, including at door openings:
 - 1) Same height transitions: similar to Schluter - SCHIENE.
 - 2) Different height transitions: similar to Schluter - RENO-U or VINPRO-U.
 - 2. Manufacturers:
 - a. LATICRETE International, Inc: www.laticrete.com/#sle.
 - b. Schluter-Systems: www.schluter.com/#sle.
 - c. Fry Reglet: www.fryreglet.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SETTING MATERIALS

- A. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
 - 1. Applications: Use this type of bond coat where indicated, and where no other type of bond coat is indicated.
 - 2. Products:
 - a. LATICRETE International, Inc: www.laticrete.com/#sle.
 - b. Merkrete, by Parex USA, Inc; Merkrete 735 Premium Flex: www.merkrete.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

2.04 GROUTS

- A. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
 - 1. Applications: At all locations.
 - 2. Color(s): As indicated on drawings.
 - 3. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
 - 4. Products:
 - a. LATICRETE International, Inc; LATICRETE SPECTRALOCK PRO Premium Grout: www.laticrete.com/#sle.
 - b. Merkrete, by Parex USA, Inc; Merkrete Pro Epoxy: www.merkrete.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

2.05 MAINTENANCE MATERIALS

- A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
 - 1. Applications: Between tile and plumbing fixtures.
 - 2. Color(s): As selected by Architect from manufacturer's full line.
 - 3. Products:

- a. LATICRETE International, Inc; LATICRETE LATASIL:
www.laticrete.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
 - 1. Composition: Water-based colorless silicone.
 - 2. Products:
 - a. Merkrete, by Parex USA, Inc; _____: www.merkrete.com/#sle.

2.06 ACCESSORY MATERIALS

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
 - 1. Crack Resistance: No failure at 1/8 inch gap, minimum.
 - 2. Thickness: 20 mils, maximum.
 - a. Products:
 - 1) LATICRETE International, Inc; FRACTURE BAN SC:
www.laticrete.com/#sle.
 - 2) Merkrete, by Parex USA, Inc; Merkrete Fracture Guard:
www.merkrete.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.
- B. Waterproofing Membrane at Showers and Tiled Tubs: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
 - 1. Fluid or Trowel Applied Type:
 - a. Thickness: 25 mils, minimum, dry film thickness.
 - b. Products:
 - 1) LATICRETE International, Inc; LATICRETE HYDRO BAN:
www.laticrete.com/#sle.
 - 2) Substitutions: See Section 01 6000 - Product Requirements.
- C. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 5/8 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- B. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.
- C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits recommended by tile manufacturer and setting materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

3.03 INSTALLATION - GENERAL

- A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- J. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- K. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- L. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.
- M. Install grout sealer at grout joints of porcelain tile per tile and grout manufacturer's instructions.
- N. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

3.05 INSTALLATION - SHOWERS AND BATHTUB WALLS

- A. At tiled shower receptors install in accordance with TCNA (HB) Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.
- B. Grout with standard grout as specified above.

3.06 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.

3.07 CLEANING

- A. Clean tile and grout surfaces.
- B. Seal grout joints and tile surfaces; in accordance with sealer manufacturer's instructions.

3.08 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation, unless otherwise approved by manufacturer. Protect tile during curing process as recommended by manufacturer.

END OF SECTION

**SECTION 09 5100
ACOUSTICAL CEILINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units for lay-in application.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASCE 7-10 - Minimum Design Loads for Buildings and Other Structures; American Society of Civil Engineers; current edition.
- C. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2017.
- D. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- E. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2022.
- F. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2022.
- G. NWCB TB 401 - Suspension Systems for Acoustical Lay-in Ceilings, Field Technical Information; Northwest Wall and Ceiling Bureau; 2009.
- H. OSSC - Oregon Structural Specialty Code, current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning and junctions with other ceiling finishes.
- C. Product Data: Provide data on suspension system components, acoustical units, and seismic restraint components.
- D. Samples: Submit two samples 6 by 6 inch in size illustrating material and finish of acoustical units.
- E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and seismic restraint details.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.
 - 3. Store where directed in un-opened cartons.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications for Seismic Design: Perform under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.
- B. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc: www.armstrong.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Suspension Systems:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- C. Manufacturers listed are approved provided they can supply units that match specified tile pattern and texture to Architect's satisfaction.

2.02 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category D, E, or F and complying with the following:
 - 1. Local authorities having jurisdiction.

2.03 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
 - 1. VOC Content: As specified in Section 01 6116.
- B. Acoustical Panels, Type ACT-1: Painted mineral fiber, with the following characteristics:
 - 1. Classification: ASTM E1264 Type III.
 - 2. Size: 24 by 48 inches.
 - 3. Thickness: 1 inch.
 - 4. Light Reflectance: .85 percent, determined in accordance with ASTM E1264.
 - 5. NRC Range: .70 to .75, determined in accordance with ASTM E1264.
 - 6. Panel Edge: Square.
 - 7. Surface Color: White.
 - 8. Surface Pattern: Fine Texture
 - 9. Products:
 - a. Ultima High NRC Tegular by Armstrong World Industries, Inc, Model #
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Acoustical Panels, Type [ACT-2]: Painted mineral fiber, with the following characteristics:
 - 1. Classification: ASTM E1264 Type III.
 - 2. Size: 24 by 48 inches.

3. Thickness: 3/4 inch.
4. Light Reflectance: .86 percent, determined in accordance with ASTM E1264.
5. NRC Range: .85 to .85, determined in accordance with ASTM E1264.
6. Panel Edge: Square.
7. Surface Color: White.
8. Surface Pattern: Fine Texture
9. Products:
 - a. Ultima Health Zone by Armstrong World Industries, Inc, Model #; 2083
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.04 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 1. Armstrong World Industries, Inc: www.armstrong.com.
 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Metal Suspension Systems for ACT: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
 1. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled heavy duty main beams and intermediate duty cross runners.
 - a. Profile: Tee; 15/16 inch wide face.
 - b. Construction: Double web.
 2. Finish: White.
 3. Products:
 - a. Prelude by Armstrong.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
 1. Wire gauge: Minimum 12 gauge.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Powder-driven Anchors: When used for seismic restraint purposes, anchors to be ICC-ES approved for seismic applications.
- D. Perimeter Moldings: Same metal and finish as grid.
- E. Perimeter Shade Pocket: 3 Sided Aluminum pocket form with special bosses to accept T-bar connection clip and splice plate; factory finished to match approved samples; factory or field cut miters to match approved shop drawings.
 1. Closure Clip: 2 inch
 2. Depth: See window shade plans for locations of single and double roller shades
 3. Locations: For use at recessed roller shades where noted on drawings
- F. Perimeter Clips: Manufacturer's standard; approved for use in lieu of 2 inch wide perimeter molding.
- G. Seismic ceiling joint trim or device: Manufacturer's standard providing 3/4 inch movement, matching grid.
- H. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

3.03 EXISTING CEILINGS

- A. Where required, or shown on plans, remove existing ceiling tile being careful not to damage existing Suspension System to provide access to Above Ceiling Space for new work.
- B. Remove and store for replacement, any existing Suspension System, where access to above Ceiling Plane areas is required by other trades.
- C. Unless required for access above Ceiling Plane, or if existing ceiling height is to be changed, Existing Suspension Systems shall be left in place, extended for new ceiling work, and cleaned and refurbished to like new condition.
- D. Replace any broken or damaged tiles with new matching units not from Owner's own stock.
- E. Leave entire Ceiling System in a completed, finished appearance.

3.04 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASCE 7-05, ASTM C 636/C 636M, ASTM E 580/E 580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Provide seismic bracing as shown on drawings and as required by OSSC for Occupancy Category II, Seismic Design Category D. NWCB Technical Bulletin 401 may be used as a reference.
 - 1. Secure grid system to two adjacent walls, provide 3/4 inch movement at opposite walls.
 - 2. Utilize approved perimeter clips instead of 2 inch wide perimeter moldings.
 - 3. Install seismic ceiling expansion joints where indicated on drawings to divide ceiling system areas to less than 2,500 square feet.
 - 4. Install powder-driven anchors for seismic applications in accordance with ICC-ES approval and with special inspection.
- D. Locate system on room axis according to reflected plan.
- E. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
- F. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- G. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- H. Seismic Suspension System, Seismic Design Categories D, E, F: Hang suspension system with grid ends attached to the perimeter molding on two adjacent walls; on opposite walls, maintain a 3/4 inch clearance between grid ends and wall.
- I. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- J. Do not allow hangers or bracing to obstruct parts of mechanical or electrical systems requiring maintenance.
- K. Provide framing around any recessed lighting fixtures and other openings.

- L. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- M. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- N. Do not eccentrically load system or induce rotation of runners.

3.05 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
 - 3. Double cut and field paint exposed reveal edges.

3.06 FIELD QUALITY CONTROL

- A. An independent testing agency will perform Special Inspection for powder-driven shot-in anchors used as part of the seismic design, as specified in Section 01 1400.

3.07 CLEANING AND PROTECTION

- A. Replace any damaged, chipped, scratched, or broken ceiling tile units identified up to the time of final completion. Use of sealant or putty patch material to conceal damage is not allowed.

3.08 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

**SECTION 09 5426
WOOD CEILINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood ceiling panels.
- B. Suspension grid.
- C. Trim and accessories.
- D. Acoustical Liner

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 2116 - Gypsum Board Assemblies
- C. Section 09 2226 - Metal Suspension Systems
- D. Section 09 5100 - Acoustical Ceilings.
- E. Division 26 – “Electrical” for light fixture and other above ceiling equipment coordination with ceiling.

1.03 REFERENCE STANDARDS

- A. ASTM A 641: Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire; 1992.
- B. ASTM C 423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 1990.
- C. ASTM C 635: Standard Specifications for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
- D. ASTM C 636: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1992.
- E. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials; 1991.
- F. ASTM E 580: Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 1991.
- G. AWI (QSI): Architectural Woodwork Quality Standards Illustrated; 2003.
- H. CISCA: Ceiling Systems Handbook.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in panel ceiling installation with minimum [5] years experience, and approved by wood ceiling manufacturer.
- B. Single-Source Responsibility for Wood Ceiling System: Obtain each type of ceiling panel from a single fabricator, with in-house shop drawing capabilities, in-house assembly and finishing capabilities, and with resources to provide products of consistent quality in appearance and physical properties without delaying the project.
- C. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying project.
- D. Pre-Installation Conference: Conduct conference at project site.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each type of product specified.

- C. Samples: For verification of each type of exposed finish required. Where finishes involve normal color and texture variations, include sample sets showing the range of variations expected.
 - 1. 12" x 18" samples of each panel type, pattern, and color.
- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- E. Shop Drawings: Provide coordinated Shop Drawings to include reflected ceiling plan and product details. Coordinate layout and installation of wood panels and suspension system components with other construction elements that penetrate ceilings or are supported by them, including light fixtures, HVAC equipment, fire-suppression system components, partition assemblies and all perimeter conditions.

1.06 FIELD CONDITIONS

- A. Do not install wood panel ceilings until spaces are enclosed and weatherproof, wet-work in spaces is completed and dry, work above ceilings is complete, and ambient temperature and humidity conditions are being maintained at the levels indicated for Project when occupied for its intended use.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Delivery & Unloading: Coordinate crate sizes, weights, unloading options, and delivery schedule with manufacturer prior to fabrication. Deliver wood panels and suspension system components to Project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other mistreatment.
- B. Climatization: Before installing wood panels, permit them to reach room temperature and a stabilized moisture content (at least 72 hours) per AWI standards.
- C. Handling: Handle Wood ceiling panels carefully to avoid chipping edges or damaging units in any way.
- D. Protection:
 - 1. Personnel: Follow good safety and industrial hygiene practices during handling and installing of all products and systems, with personnel to take necessary precautions and wear appropriate protective equipment as needed. Read related literature for important information on products before installation. Contractor to be solely responsible for all personal safety issues during and subsequent to installation; architect, specifier, owner, and manufacturer will rely on contractor's performance in such regard.
 - 2. Existing completed work: Protect completed work above suspension system from damage during installation of suspension system components.

1.08 EXTRA MATERIALS/WARRANTIES

- A. Extra Materials: Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.
 - 1. Wood ceiling panels: Furnish quantity of full-size units equal to 2.0 percent of amount installed.
 - 2. Suspension System Components: Furnish quantity of each component equal to 2.0 percent of amount installed.
- B. Warranties: Provide owner with a (1) year warranty for material and workmanship on all installed products.
 - 1. Manufacturers: All materials, wood ceiling and grid, shall be warranted for (1) one year for material and workmanship.
 - 2. Installer: All work shall be warranted for (1) year from date of substantial completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. 9wood, Inc., www.9wood.com.
- B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 WOOD CEILING PANELS

- A. Suspended Wood Ceiling Panels: Type WD-1
 - 1. Basis of Design: 9Wood, Inc. Series: 1100 Cross Piece Grille
 - a. SKU: 1124-2
 - b. Species: Douglas Fir, solid, clear, mixed grain
 - c. Member Size: 1 7/16 inch x 3 1/4 inch
 - d. Edge Profile: Square
 - e. Members/LF: 2
 - f. Assembly Style: Cross Piece Backer
 - g. Panel Sizes: Nominal size, 4 feet to 12 feet;
 - h. Fire Rating: Fire Rating Class, Class 1(A) Fire Rating
 - i. Finish: Standard Clear Finish w/ Matte Sheen
 - j. Color: Standard Maple Finish

2.03 SUSPENSION SYSTEMS

- A. Metal T-grid Suspension System: ASTM C635, standard interior 15/16 inch heavy-duty metal suspension system using main runners, cross-tees, and wall angles, with "black" finishes as indicated. Comply with all applicable seismic codes and ordinances.
- B. Attachment Devices: Size for 3 times the design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- C. Wire, Braces, Ties, Hanger Rods, Flat Hangers and Angle Hangers: Provide wires, rods and hangers that comply with applicable ASTM specifications.

2.04 ACOUSTICAL LINER

- A. Semi-rigid acoustical board applied to upper surface of certain wood grid sections, above the black fabric, where shown on drawings.
- B. Manufactured by AcoustiCotton, www.acousticotton.com.
 - 1. Northwest Distributor: Architextures/Magicare, 206.634.1166.
- C. Thickness: 2 inch.
- D. Density: 4.5 pounds.
- E. NRC: 1.00
- F. Material: 100% recycled post-industrial denim and cotton fibers.
- G. Fire Hazard Classification: Class A fire rating.
- H. Color: Black.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. General: Examine substrates and structural framing to which ceilings attach or abut, with installer present, for compliance with requirements specified in this and other sections that affect ceiling installation and anchorage. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.

- B. Layout: Measure each ceiling area and establish the layout of Wood Panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and conform to the layout shown on reflected ceiling plans in accordance with wood ceiling manufacturer's approved Shop Drawings.

3.03 INSTALLATION

- A. General: Install ceiling grid and panel systems to comply with manufacturer's instructions and CISCA "Ceiling Systems Handbook."
- B. Attachments: Suspend ceiling hangers from building's structural members per manufacturer's instructions and in compliance with all local codes and regulations.
- C. Installation of Metal T-Bar Grid: Install, align, brace, tie-off, mount, handle interferences, and space suspension T-Grid in accordance with suspension manufacturer's instructions and in compliance with all local codes and regulations.
- D. Suspension Runners: Install suspension system runners so they are square and securely interlocked with one another. Install number and use on-center spacing per wood ceiling manufacturer's instructions, as indicated on approved Shop Drawings and in compliance with all local codes.
- E. Installation of wood panels: Install wood ceiling panels in accordance with manufacturer's installation instructions and in compliance with all local codes and regulations. Install with undamaged edges and fitted accurately to suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit, as required.
- F. Field stain all exposed field-cut panel ends to match finish of panels.

3.04 CLEANING

- A. Clean exposed wood surfaces in accordance with manufacturer's instructions for cleaning and touchup of minor finish damage. Remove and replace wood ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient sheet flooring.
- B. Resilient tile flooring.
- C. Resilient base.
- D. Installation accessories.
- E. Concrete Slab Moisture Barrier

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.
- C. Section 09 0561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

- A. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2017.
- B. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.
- C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.
- D. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.
- F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions. Provide data on sealer, if recommended by flooring manufacturer.
- C. Shop Drawings: Indicate seaming plan, location of edge strips, and floor pattern as applicable.
- D. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.
- E. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Flooring Material: 20 square feet of each type and color.
 - 3. Extra Wall Base: 10 linear feet of each type and color.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing resilient flooring with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring products with minimum 5 years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- C. Protect roll materials from damage by storing on end.

1.08 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 SHEET FLOORING

- A. Vinyl Sheet Flooring - Type RS-1: Homogeneous without backing, with color and pattern throughout full thickness.
 - 1. Manufacturers:
 - a. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Minimum Requirements: Comply with ASTM F1913.
 - 3. Thickness: 0.080 inch nominal.
 - 4. Product: _____.
 - 5. Color: As indicated on drawings.

2.02 TILE FLOORING

- A. Luxury Vinyl Tile - Type LVT-1 - 5: Printed film type, with transparent or translucent wear layer.
 - 1. Manufacturers:
 - a. Patcraft; www.patcraft.com
 - b. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Collection: POLYCHROME
 - 3. Color: As shown on drawings
 - 4. Plank Tile Size: 9 inches by 48 inches
 - 5. Wear Layer Thickness: .020 inches
 - 6. Installation Method:

2.03 RESILIENT BASE

- A. Resilient Base Type B-1: ASTM F1861, Type TP, rubber, thermoplastic; top set Style B, Cove.
 - 1. Manufacturers:
 - a. Johnsonite, a Tarkett Company: www.johnsonite.com.
 - b. Roppe Corporation: www.roppe.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with NFPA 253 (Class 1).
3. Height: 4 inch.
4. Thickness: 0.125 inch.
5. Finish: Satin.
6. Length: Roll.
7. Color: As shown on drawings.

2.04 ACCESSORIES

- A. Concrete Slab Moisture Barrier: High strength, latex-based compound formulated to isolate cut-back and other existing adhesives that could affect the bond of the new floor adhesives.
 1. The slab sealer material must be compatible with previously applied curing agents, and adhesives and must meet the CRI low-VOC emission criteria, C.R.I. ID# AA-580309, and shall not contain any known hazardous materials. The material must be non-toxic, ultra-low odor, waterproof when dry.
 2. Flammability Certification: Class A: Passes tunnel test ASTM number E84-70 (identical test method to ANS Number 2-5), NFPA number 755, UL number 723, and UBC 42-1.
 3. Warranty: Provide manufacturers lifetime moisture vapor emissions and moisture penetration warranty. Follow manufacturer's installation instructions exactly to guarantee that warranty will be issued.
 4. Products:
 - a. J & J Commercialon: 877 Premium Barrier Coat
 - b. Substitutions: See Section 01 6000 - Product Requirements.
 5. Extent of Work: Provide floor sealer on all new concrete slabs to receive new floor covering.
- B. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- C. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
 1. VOC Content Limits: As specified in Section 01 6116.
- D. Moldings, Transition and Edge Strips: Metal, Similar to Schluter®-VINPRO-U for sloped transitions.
- E. Rubber Base Sealant: Clear silicone sealant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 1. Test in accordance with Section 09 0561.
 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- C. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions for glue down application.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints and butt seams tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
- B. Seal seams by heat welding.

3.05 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Install tile flooring in pattern as indicated on the drawings.

3.06 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.
- E. At all areas where rubber base is scheduled provide silicone sealant under base at top and bottom edges and at all joints and corners. This applies to all wet areas.

3.07 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.08 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

**SECTION 09 6813
TILE CARPETING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.
- B. Walk off carpet tile

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied flooring.
- C. Section 09 0561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016 (Reapproved 2021).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2019a, with Editorial Revision (2020).
- C. CRI 104 - Standard for Installation of Commercial Carpet; 2015.
- D. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Current Edition.
- E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Shop Drawings: Indicate layout of joints, direction of carpet pile, and location of edge moldings.
- D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- E. Accessory Samples: Submit two 12 inch long samples of edge strip.
- F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- G. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

1.06 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 MATERIALS

- A. Carpet Tile, Type CPT-1 & CPT - 2: Tufted, manufactured in one color dye lot.
 - 1. Product: _____ manufactured by Patcraft.
 - 2. Tile Size: 24 by 24 inch, nominal.
 - 3. Color: As shown on drawings.
 - 4. Pattern: As shown on drawings.
 - 5. Installation: Brick Ashlar
 - 6. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
 - 7. VOC Content: Comply with Section 01 6116.
 - 8. TARR Rating: Severe
 - 9. Backing Material: EcoFlex Matrix backing .
- B. Walk Off Mat, (WOM-1)
 - 1. Product: Welcome II Tile manufactured by Shaw Contract
 - 2. Tile Size: 24 x 24 inch
 - 3. Color: As shown on drawings
 - 4. Weight: 49 oz/ sq yd
 - 5. Fiber System: 100% PET fiber polyester

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Glue down vinyl or rubber. Roppe vinyl accessories "adapters, transitions, and reducers", or approved equal; style appropriate for thicknesses of materials used, color as selected by Architect.
- C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test in accordance with Section 09 0561.
 - 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

- A. Remove existing carpet tile.
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

- D. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- E. Vacuum clean substrate.
- F. Wet mop immediately prior to new carpet tile installation, and remove all deleterious substances which would interfere with the installation, would be harmful to the work, or would inhibit the free-lay method of installation of carpet tiles.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Locate change of color or pattern between rooms under door centerline for dissimilar materials. For areas of carpet tile at adjacent rooms, continue pattern through room as shown on f
- G. Fully adhere carpet tile to substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

3.04 ENTRY MAT INSTALLATION

- A. Install in strict accordance with manufacturer's recommendations, using manufacturer's recommended adhesive suitable for project conditions.
- B. Follow manufacturer's recommended seaming techniques.
- C. Roll with appropriate roller for complete contract of adhesive to entry mat backing, rolling at least twice, once in each direction.
- D. Keep all traffic off entry mat for 24 hours after installation. Wait 72 hours prior to initial cleaning.
- E. Lay entry mat in pattern as directed by manufacturer.

3.05 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

END OF SECTION

**SECTION 09 8405
ACOUSTICAL WALL PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Acoustic Wall Panels

1.02 RELATED REQUIREMENTS

- A. Section 09 5100 - Acoustical Ceilings.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010b.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed data sheets for products specified.
- C. Shop Drawings: Fabrication and installation details, panel layout, and fabric orientation.
- D. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available .
- E. Verification Samples: Fabricated samples of each type of panel specified; 12 x 12 in, showing construction, edge details, and fabric covering.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Panels: Quantity equal to 5 percent of total installed, but not less than one of each type.

1.05 MOCK-UP

- A. See Section 01 4000 - Quality Requirements, for additional mock-up requirements.
- B. Construct mock-up of acoustical panels at location indicated by Architect.
 - 1. Extent of mock-up:
 - a. Two adjacent full size panels of each type.
 - 2. Approved mock-up may remain as part of the Work.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company with not less than 5 years of experience in manufacturing acoustical products similar to those specified.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect acoustical panels from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until panels are needed for installation.
- B. Store panels flat, in dry, well-ventilated space; do not stand panels on end.
- C. Protect panel edges from damage.

1.08 MOCK-UP

- A. See Section 01 4000 - Quality Requirements, for additional mock-up requirements.
- B. Construct mock-up of acoustical panels at location indicated by Architect.
 - 1. Minimum mock-up dimensions: 96 x 96 inches.
 - 2. Approved mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustical Panels:
 - 1. Basis of Design: Fsorb: <https://www.f-sorb.com/>
- B. Substitutions: See Section 01 6000 - Product Requirements.
- C. Provide all acoustical panels by one single manufacturer.

2.02 ACOUSTICAL WALL PANELS

- A. Panels: Site fabricated frame, core and fabric covering.
 - 1. Basis of Design: 2 inch sheets by Fsorb
 - 2. Nominal Size: As indicated on drawings
 - 3. Nominal Thickness: 2 inch
 - 4. Color: As indicated on interior finish legend on drawings
 - 5. Acoustical Performance: Sound absorption NRC of 1.05
 - 6. Cut Shapes: As indicated on drawings. CAD files can be provided by Architect.
 - 7. Location: As indicated on drawings

2.03 ACCESSORIES

- A. Panel Adhesive:
 - 1. Refer to section 01 60 00 (01600) - Product Requirements for VOC limits for adhesives, sealants, paints and coatings.
 - 2. Acceptable to panel manufacturer for application indicated
- B. Back-Mounting Accessories: Manufacturer's standard accessories for concealed support, designed to allow panel removal, and as follows:
 - 1. Z-clip hanger and magnet system with magnets recessed into panel frame and designed to engage steel mounting plates secured to substrate with screws.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates for conditions detrimental to installation of acoustical panels. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install acoustical panels in locations indicated, following installation recommendations of panel manufacturer. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.
- B. Install panels to construction tolerances of plus or minus 1/8 in for the following:
 - 1. Plumb and level.
 - 2. Flatness.
 - 3. Width of joints.
- C. Field measure each wall area, which is to receive the acoustical or tackable treatment to establish the exact layout of the units as shown on elevations.
- D. Install the semi-rigid core material, continuous and flush, to the shoulder of the track.
- E. Penetrations through the face of the fabric of any kind (i.e. staples, nails, etc.) will be prohibited.

3.03 CLEANING

- A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.
- B. Remove surplus materials, trimmed portions of panels, and debris resulting from installation.

3.04 PROTECTION

- A. Provide protection of installed acoustical panels until completion of the work.
- B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

END OF SECTION

SECTION 09 8414
ACOUSTIC STRETCHED-FABRIC WALL AND CEILING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Acoustic or tackable stretched-fabric wall systems of site fabricated wall panels.
- B. Accessories as required for complete installation.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- B. ASTM E2573 - Standard Practice for Specimen Preparation and Mounting of Site-Fabricated Stretch Systems to Assess Surface Burning Characteristics; 2024.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Specimen warranty.
- C. Shop Drawings: Elevations indicating proposed locations of fabric seams and details indicating typical transitions to other finish surfaces.
- D. Verification Samples:
 - 1. For each fabric specified, minimum size 12 inch square, representing actual product in color, texture, and pattern.
 - 2. Core backing material, minimum size 12 inch square.
- E. Maintenance Data: As described in Section 01 78 23.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company with not less than 5 years of experience in manufacturing products similar to those specified. Provide all components of site fabricated wall systems by a single manufacturer, including recommended primers, adhesives, frame components, and sealants.
- B. Installer Qualifications: Firm specializing in site-fabricated wall systems, with not less than 5 years of documented experience in installing wall systems of the type specified, and approved by the manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect fabric, core, and track from excessive moisture in shipment, storage, and handling.
- B. Do not deliver materials to project until wet work such as concrete and plaster has been completed.
- C. Store products in manufacturer's unopened packaging until ready for installation.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

- A. Do not begin installation until interior conditions have reached temperature and humidity that will be maintained during occupancy.
- B. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 STRETCHED-FABRIC WALL SYSTEM

- A. Stretched-Fabric Wall System: Field installed, fabric is stretched and set into framework and laid over acoustic material anchored to substrate. Framework consists of continuous perimeter and intermediate mounting frames anchored to substrate, and designed to permit removal and replacement of fabric within framed areas without affecting adjacent areas.
 - 1. Surface Burning Characteristics: Flame Spread Index of 25, maximum; Smoke Developed Index of 450, maximum; when whole system is tested in accordance with ASTM E84 using mounting specified in ASTM E2573 for stretched systems.
 - 2. Prefabricated, fabric covered and individually framed panels are not permitted.
 - 3. Seams in fabric are not permitted; adjust frame layouts to accommodate width of fabric; obtain written approval of frame layouts from Architect.
 - 4. Manufacturers:
 - a. FabriTRACK Systems Inc, www.fabritrak.com
 - b. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 MATERIALS

- A. Frame: Extruded polymer framing system with serrated jaws of sufficient strength to hold fabric in place after repeated applications.
 - 1. Thickness to accommodate core material.
 - 2. Profile: Square
- B. Core Material:
 - 1. Infill: FabriTACK, Black Face
 - 2. Thickness: 1 inch
 - 3. Fasteners and Adhesives: As recommended by manufacturer of wall system for project conditions and compliant with Project VOC requirements.
 - 4. Acoustical Testing: ASTM C 423: NRC .80
 - 5. Fire Testing: ASTM E84 Class A
- C. Fabric: As indicated on drawings

PART 3 EXECUTION

3.01 EXAMINATION

- A. Begin installation only after substrates have been properly prepared.
- B. Verify that casework, markerboards, door and window jambs, finished ceiling, and other finished items adjacent or abutting the acoustic stretched-fabric system have been properly installed.
- C. When preparation of substrate is the responsibility of another installer, notify Architect of unsatisfactory preparation prior to proceeding with this work.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation of this work.
- B. Prepare substrate surfaces using methods as recommended by the manufacturer for achieving acceptable result as required for this work.

- C. Remove wall plates and other obstacles, and properly prepare substrates to receive frames and acoustic material in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Install acoustic stretched-fabric system at locations indicated in accordance with approved shop drawings and manufacturer's instructions.
- B. Field measure each wall area, which is to receive the acoustical or tackable treatment to establish the exact layout of the units as shown on elevations.
- C. Apply the framework in the areas to receive the acoustical wall treatment as shown on the drawings. Secure the framework with suitable mastic and special, heavy duty; one-inch diverging staples located not more than 2" on center. Other fasteners may be used as required for specific substrates, providing they are strict accordance with the manufacturer's printed instructions and comply with governing regulations and fire resistance rating requirements specified.
- D. Install the framework plumb and straight, flush in proper alignment.
- E. Install the sub-surface material, continuous and flush, to the shoulder of the track.
- F. Cut the fabric from each roll marking and maintaining sequence of drops and matching direction of weave for sequential and uniform installation.
- G. Install the fabric from the face side after the framework is securely fastened to insure perfect horizontal and vertical grain alignment.
- H. The fabric shall be stretched tautly, evenly and smoothly and be free of defects and flaws.
- I. No stapling or gluing of fabric to core or channels will be permitted.
- J. Penetrations through the face of fabric of any kind (i.e. staples, nails, etc.) will be prohibited.

3.04 CLEANING

- A. Clean exposed surfaces of acoustic stretched-fabric system in compliance with manufacturers instructions for cleaning and repair of minor damage to exposed surfaces.
- B. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage to system.

3.05 PROTECTION

- A. Protect installed materials upon completion of this work, using methods that will ensure that the finished work is without damage or deterioration upon Date of Substantial Completion.

END OF SECTION

**SECTION 09 9600
HIGH-PERFORMANCE COATINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. High performance coatings (HPC or HP) for the following conditions:
 - 1. Exterior Substrates:
 - a. Steel.
 - b. Galvanized steel.
 - 2. Interior Substrates:
 - a. Steel.
 - b. Galvanized steel.
- B. Special preparation of surfaces.

1.02 RELATED REQUIREMENTS

- A. Section 05 1200 - Structural Steel Framing: Shop priming of metal substrates with primers specified in this Section.
- B. Section 05 1213 - Architecturally-Exposed Structural Steel Framing:
- C. Section 05 5000 - Metal Fabrications: Shop priming of metal substrates with primers specified in this Section.
- D. Section 05 5100 - Metal Stairs: Shop priming of metal substrates with primers specified in this Section.
- E. Section 05 2100 - Steel Joist Framing: Shop priming of metal substrates with primers specified in this Section.
- F. Section 05 3100 - Steel Decking: Shop priming of metal substrates with primers specified in this Section.
- G. Section 08 1113 - Hollow Metal Doors and Frames: Shop priming of metal substrates with primers specified in this Section.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.
- B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test.
- C. SSPC-PA 2 - Measurement of Dry Coating Thickness with Magnetic Gages.
- D. SSPC-SP 3 - Power Tool Cleaning; Society for Protective Coatings.
- E. SSPC-SP 6 - Commercial Blast Cleaning; Society for Protective Coatings.

1.04 SUBMITTALS

- A. See Section 01 3300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating coating materials.
 - 1. Include printed statement of VOC content and chemical components for interior coatings.
- C. Samples for Verification: For each type of coating system and in each color and gloss of finish coat indicated.
 - 1. Submit Samples on shop primed and galvanized steel, 8 inches square.
- D. Product List: For each product indicated. Cross-reference products to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules.

- E. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and surface preparation requirements.
- F. Maintenance Data: Include cleaning procedures and repair and patching techniques.
 - 1. At project completion, provide an itemized list complete with manufacturer, coating type and color coding for all colors used for Owner's later use in maintenance.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Coating Materials: 1 gallon of each type and color. All extra stock containers are to be new and unopened.
 - 2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.05 PREINSTALLATION CONFERENCE

- A. Preinstallation Conference: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers. Agenda items will include field conditions, substrate conditions, coordination of shop applied primers with finish coatings, application methods, and field quality control testing and inspection.
 - 1. Bring copies of reviewed color draw-downs for all required colors.

1.06 QUALITY ASSURANCE

- A. Master Painters Institute (MPI) Standards:
 - 1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and coating systems indicated.
- B. Surface Preparation: Obtain written confirmation of the specific surface preparation procedures and primers used for all fabricated steel items from the fabricator(s) to ascertain appropriate and manufacturer compatible finish coat materials to be used before painting any such work.
- C. Comply with requirements of SSPC-PA 2 for measurement of coating thickness.

1.07 MOCK-UP

- A. Mockups: Apply benchmark samples of each coating system indicated to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each type of coating and substrate.
 - 2. Apply interior benchmark samples after permanent lighting and other environmental services have been activated.
 - 3. Final approval of color selections will be based on benchmark samples.
 - a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.
- B. Locate where directed.
- C. Mock-up may remain as part of the Work.

1.08 FIELD CONDITIONS

- A. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.
- B. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.
- D. Restrict traffic from area where coating is being applied or is curing.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Products: Provide one of the products listed in Part 2.
- B. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in Part 2:
 - 1. AkzoNobel Devoe Coatings (AkzoNobel)
 - 2. Sherwin-Williams Co. (S-W).
 - 3. Tnemec Company, Inc. (Tnemec).
- C. Substitutions: Not permitted.

2.02 MATERIALS

- A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.
 - 1. For shop primed items, omit specified primer if shop primer is compatible with finish coats and in good condition as determined by finish coating manufacturer.
- B. Material Compatibility: Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - 1) Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Chemical Content: The following compounds are prohibited at interior applications:
 - 1. Aromatic Compounds: In excess of 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
 - 2. Acrolein, acrylonitrile, antimony, benzene, butyl benzyl phthalate, cadmium, di (2-ethylhexyl) phthalate, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-dichlorobenzene, diethyl phthalate, dimethyl phthalate, ethylbenzene, formaldehyde, hexavalent chromium, isophorone, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, naphthalene, toluene (methylbenzene), 1,1,1-trichloroethane, vinyl chloride.

2.03 EXTERIOR, HIGH-PERFORMANCE COATING SCHEDULE

- A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on appropriately shop-primed items.
 - 1. Two-Component, Pigmented Aliphatic Acrylic Polyurethane: One finish coat, over one intermediate coat, and one metal primer coat.
 - a. Prime: Manufacturer's recommended Zinc-rich metal primer; MPI#19, MPI #20.
 - 1) AkzoNobel Devoe Coatings: 302H Catha-Coat Reinforced Zinc Primer.
 - 2) Sherwin Williams: Zinc-Clad XI
 - 3) Tnemec: Series 394 PerimePrime
 - 4) Applied 4.0 - 7.0 mils dry film thickness.

- b. Intermediate Coat: Polyamide Epoxy; MPI #108
 - 1) AkzoNobel Devoe Coatings: Bar-Rust 235 Epoxy
 - 2) Sherwin Williams: Macropoxy 646 Fast Cure Epoxy B58.
 - 3) Tnemec: Series 27 Typoxy WB at 3 to 5 mils.
 - 4) Applied 5.0 - 10.0 mils dry film thickness, or greater if recommended by manufacturer for even color.
 - c. Finish Coat: Aliphatic Urethane - Finish Coat; MPI #72
 - 1) AkzoNobel Devoe Coatings: Devthane 379
 - 2) Tnemec: Series 750 Endura-Shield at 2 to 3 mils.
 - 3) Sherwin Williams: Hi-Solids Polyurethane 250
 - 4) Applied 3.0 - 5.0 mils dry film thickness, or greater if recommended by manufacturer for even color.
 - 5) Gloss: MPI gloss level 6-7
 - d. Additional Topcoats: Manufacturer's recommended clear topcoat, it any, as required to assure colorfastness of final coating system.
- B. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated (galvanized) metal surfaces:
- 1. Two-Component, Pigmented Aliphatic Acrylic Polyurethane: One finish coat, over one intermediate coat.
 - a. Intermediate Coat: Polyamide Epoxy; MPI #108
 - 1) AkzoNobel Devoe Coatings: Bar-Rust 235 Epoxy
 - 2) Sherwin Williams: Macropoxy 646 Fast Cure Epoxy B58.
 - 3) Tnemec: Series 27 Typoxy WB at 3 to 5 mils.
 - 4) Applied 3.0 - 5.0 mils dry film thickness, or greater if recommended by manufacturer for even color.
 - b. Finish Coat: Aliphatic Urethane - Finish Coat; MPI #72
 - 1) AkzoNobel Devoe Coatings: Devthane 379
 - 2) Tnemec: Series 750 Endura-Shield at 2 to 3 mils.
 - 3) Sherwin Williams: Hi-Solids Polyurethane 250
 - 4) Applied 3.0 - 5.0 mils dry film thickness or greater if recommended by manufacturer for even color.
 - 5) Gloss: MPI gloss level 6-7
 - c. Additional Topcoats: Manufacturer's recommended clear topcoat, it any, as required to assure colorfastness of final coating system.

2.04 INTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Ferrous Metal: Provide the following finish systems over interior ferrous metal.
 - 1. Semi-Gloss, Two-Component, VOC Compliant or Waterborne Pigmented Aliphatic Acrylic Polyurethane: One or two finish coats, of two-component, aliphatic acrylic polyurethane coating, over metal primer with total dry film thickness not less than 6.0 mils, unless noted otherwise.
 - 2. Primer Coat: Polyamide Epoxy; MPI #108
 - a. AkzoNobel Devoe Coatings: Bar-Rust 235 Epoxy
 - b. Sherwin Williams: Macropoxy 646 Fast Cure Epoxy B58.
 - c. Tnemec: Series 27 Typoxy WB at 3 to 5 mils.
 - d. Applied 4.0 - 6.0 mils dry film thickness, or greater if recommended by manufacturer for even color.
 - 3. Finish Coat: Aliphatic Urethane - Finish Coat; MPI #72
 - a. AkzoNobel Devoe Coatings: Devthane 379
 - b. Tnemec: Series 750 Endura-Shield at 2 to 3 mils.
 - c. Sherwin Williams: Hi-Solids Polyurethane 250

- d. Applied 3.0 - 5.0 mils dry film thickness, or greater if recommended by manufacturer for even color.
- e. Gloss: MPI gloss level 6-7
- 4. Additional Topcoats: Manufacturer's recommended clear topcoat, if any, as required to assure colorfastness of final coating system.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
 - 1. After completing coating operations, reinstall items that were removed; use workers skilled in the trades involved.
- C. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce coating systems indicated.
 - 2. At interior steel abrade the top layer of primer, unless otherwise required by coating manufacturer.
 - 3. At exterior steel, provide surface preparation equivalent to SSPC-SP 6 "Commercial Blast Cleaning."
- D. Steel Substrates: Remove rust and loose mill scale.
 - 1. Prepare interior surfaces as recommended by coating system manufacturer and according to SSPC-SP 3 "Power Tool Cleaning."
 - 2. Blast steel surfaces clean as recommended by coating system manufacturer and according to SSPC-SP 6 "Commercial Blast Cleaning," unless otherwise recommended by manufacturer.
 - 3. Level of surface preparation specified is a minimum. If the coating manufacturer requires a higher degree of preparation, comply with the coating manufacturer's recommendations.
- E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
- F. Remove finish hardware, fixture covers, and accessories and store.
- G. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

3.03 PRIMING

- A. Apply primer to unprimed surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.04 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified. Use applicators and techniques suited for coating and substrate indicated.

- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color and appearance.
- D. When the color of a door frame changes from side to side, the change shall be made at the edge of the stop, where the transition is not visible when the door is in a closed position.

3.05 FIELD QUALITY CONTROL

- A. Painted surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to Architect.
 - 1. Brush/roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, or foreign materials in paint coatings.
 - 2. Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners, reentrant angles or similar conditions.
 - 3. Damage due to touching before paint is sufficiently dry or any other contributory cause.
 - 4. Damage due to application on moist surfaces or caused by inadequate protection from the weather.
 - 5. Damage and/or contamination of paint due to blown contaminants (dust, spray paint, etc.).
- B. Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces:
 - 1. Visible defects are evident on vertical or horizontal surfaces when viewed at normal viewing angles from a distance of not less than 39 inches.
 - 2. Visible defects are evident on ceilings, soffits and other overhead surfaces when viewed at normal viewing angles.
 - 3. When the final coat on any surface exhibits a lack of uniformity of color, sheen texture and hiding across full surface area.
 - 4. Dry mil thicknesses do not meet manufacturer's recommended thickness or specified thickness.
 - 5. Lack of adhesion. Test surfaces indicating lack of adhesion in accordance with ASTM D3359 or as recommended by coating manufacturer.
- C. Owner will provide field inspection and testing.
 - 1. Painted surfaces will be tested for dry mil thickness for each coat.
 - 2. Shop primers and painted surfaces will be tested for adhesion.
 - 3. Surfaces will be tested at frequency discussed in the preinstallation conference and as deemed appropriate by Owner.

3.06 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

- E. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.07 PROTECTION

- A. Protect finished work from damage.

3.08 EXTERIOR SCHEDULE

- A. Ferrous Metal: Semigloss, Two-Component, Pigmented Aliphatic Acrylic Polyurethane. One finish coat, over one intermediate coat, and one metal primer coat:
 - 1. Bike Canopy Structural Steel Columns and Beams
 - 2. Supporting steel at aluminum storefronts at the following locations:
 - a. South Vestibule and Lobby
 - b. North Vestibule
 - c. Aquatics Center windows on north elevation
 - 3. Bent Steel Plate Sunshades
 - 4. Steel Bollards
 - 5. Metal Stairs and Railings
 - 6. Hollow metal doors and frames
 - 7. Other locations where indicated
- B. Galvanized Metal: Semigloss, Two-Component, Pigmented Aliphatic Acrylic Polyurethane. One finish coat, over intermediate coat:
 - 1. Steel Pipe Downspouts
 - 2. Steel Rain Water Runnel
 - 3. Steel Lintels

3.09 INTERIOR SCHEDULE

- A. Steel: Semigloss, Two-Component, Pigmented Aliphatic Acrylic Polyurethane. One finish coat, over intermediate coat and metal primer:
 - 1. Metal stairs and railings.
 - 2. Steel handrails and guardrails.
 - 3. Hollow metal doors and frames.
 - 4. Open web steel joists and metal decking in Aquatic Center and Pool Mechanical.
 - 5. Other locations where indicated.

END OF SECTION

**SECTION 10 1100
VISUAL DISPLAY UNITS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Markerboards.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Blocking and supports.
- B. Section 09 2216 - Non-Structural Metal Framing: Concealed supports in metal stud walls.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data on porcelain enamel steel markerboard, trim, and accessories.
- C. Shop Drawings: Indicate wall elevations, dimensions, joint locations , special anchor details.
- D. Samples: Two, 2 by 2 inches in size illustrating materials and finish, color and texture of porcelain enamel steel markerboard.
- E. Manufacturer's printed installation instructions.
- F. Maintenance Data: Include data on regular cleaning, stain removal.

1.05 QUALITY ASSURANCE

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

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's "Forever Warranty" warranty for markerboard to include warranty against material or manufacturing defects and retain its inherent qualities.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Markerboards:
 - 1. Platinum Visual Systems; www.pvsusa.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MARKERBOARDS

- A. Magnetic Markerboards: Porcelain enamel on steel, laminated to core.
 - 1. Basis of Design: Writanium Porcelian Markerboard
 - 2. Size: As indicated on drawings.
 - 3. Core Material: 7/16 inch particle board
 - 4. Backing Material: 0.005 inch aluminum backing sheet
 - 5. Color: Bright White
 - 6. Frame: Standard channel frame with 3/4 inch face .

2.03 ACCESSORIES

- A. Temporary Protective Cover: Sheet polyethylene, 8 mil thick.
- B. Marker Rail: Drop in Tray Trim System (DTS)
- C. Mounting Brackets: Concealed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that internal wall blocking is ready to receive work and positioning dimensions are as indicated on shop drawings.
- C. Verify interior walls are flat, clean, dry, and ready to receive marker boards per manufacturer's installation guidelines.

3.02 INSTALLATION

- A. Install boards in accordance with manufacturer's instructions for adhesive installation.
- B. Secure units level and plumb.
- C. Butt Joints: Install with tight hairline joints.
- D. Leave manufacturer's protective peel-sheet on during installation process. Do not remove until ready to use.

3.03 CLEANING

- A. Clean board surfaces in accordance with manufacturer's instructions.
- B. Cover with protective cover, taped to frame.
- C. Remove temporary protective cover at Date of Substantial Completion.

END OF SECTION

**SECTION 10 2113.19
PLASTIC TOILET COMPARTMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid plastic toilet compartments.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications: Concealed steel support members.
- B. Section 09 2113 - Gypsum Board Assemblies: Metal wall and ceiling framing, backing and blocking.
- C. Section 10 2800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on panel construction, hardware, and accessories.
- C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.
- D. Samples: Submit two samples of partition panels, 6 by 6 inch in size illustrating panel finish, color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Bobrick Washroom Equipment, Inc: www.bobrick.com. Basis of Design: Duraline 1082 Series "Kiddie" Height by Bobrick.
- B. Substitutions: Section 01 6000 - Product Requirements.

2.02 COMPONENTS

- A. Toilet Compartments Configuration: Solid phenolic core, laminate finished, floor mounted, overhead braced.
- B. Doors, panels and pilasters: Laminate finish surface, solid phenolic core with no voids, beveled corners and edges; edges of cut-outs sealed.
 - 1. Reinforce pilasters and panels with steel plate sandwiched in particleboard core at attachment points. Router cut openings as required.
 - 2. Plastic Laminate color: Citadel Warp 5882-58
- C. Doors:
 - 1. Thickness: 3/4 inch.
 - 2. Width: 24 inch.
 - 3. Width for Handicapped Use: 36 inch, out-swinging.
 - 4. Height: 36 inch. "Kiddie"
- D. Panels:
 - 1. Thickness: 1/2 inch.
 - 2. Height: 36 inch.

3. Depth: As indicated on drawings.
- E. Pilasters:
 1. Thickness: 3/4 inch.
 2. Height: 48 inch
 3. Width: As required to fit space; minimum 3 inch.

2.03 ACCESSORIES

- A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 4 inch high, concealing floor fastenings.
 1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.
- B. Wall Brackets: Stainless steel; continuous type, satin.
- C. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.
 1. For attaching panels and pilasters to brackets: Through-bolts and nuts ; tamper proof.
- D. Hardware, Satin Stainless Steel:
 1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
 2. Nylon bearings
 3. Thumb turn door latch with exterior emergency access feature.
 4. Heavy duty door stricke and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
 5. Coat hook with rubber bumper; one per compartment, mounted on door.
 6. Provide door pulls for outswinging doors.
 7. Door Latch: Track of door latch prevents inswing doors from swinging out beyond stile; on outswing doors, door keeper prevents door from swinging in beyond stile; 16 gauge sliding door latch, 14 gauge keeper.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 PREPARATION

- A. Prepare substrates including but not limited to blocking and supports in walls and ceilings at points of attachment using methods recommended by the manufacturer for achieving the best result for the substrates under the project conditions.
 1. Inspect areas scheduled to receive compartments for correct dimensions, plumbness of walls, and soundness of surfaces that would affect installation of mounting brackets.
 2. Verify spacing of plumbing fixtures to assure compatibility with installation of compartments.
- B. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
- C. Do not proceed with installation until substrates have been properly prepared with blocking and supports in walls and ceilings at points of attachment and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

3.03 INSTALLATION

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

- B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets.

3.04 TOLERANCES

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Variation From Plumb: 1/8 inch.

3.05 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.
- C. Adjust adjacent components for consistency of line or plane.

END OF SECTION

**SECTION 10 2239
FOLDING PANEL PARTITIONS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Paired Panel Operable Panel Partition
- B. Ceiling track and operating hardware.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking and track support shimming.
- B. Section 09 2116 - Gypsum board assemblies - Enclosure around structural support framing.

1.03 REFERENCE STANDARDS

- A. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.
- C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.
- D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.
- E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches size, illustrating quality, colors selected, texture, and weight.
- F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.
- G. Manufacturer's Instructions: Indicate special procedures, perimeter conditions requiring special attention, and installation sequence.
- H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.
 - 1. Seals, hardware, track, carriers, and other operating components.

1.05 QUALITY ASSURANCE

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

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide two year manufacturer warranty against defects in material and workmanship, excluding abuse.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Folding Panel Partitions - Horizontal Opening:
 - 1. Hufcor, Inc; Series 600: www.hufcor.com/#sle.
 - 2. Corflex; Series 5500 - 5600; <https://corflex.ca/en/products/movable-partitions/>
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAIRED PANEL OPERABLE WALL

- A. Paired Panel Operable Panel Partition: Side opening; paired panels; center stacking as indicated; manually operated, top supported with operable floor seals and automatic seals.
 - 1. Basis of Design: Modernfold Acousti-Seal 932 - Operable Wall between classrooms
 - a. Panel Finish: Fabric wall covering.
 - 1) Fabric: To be selected from manufacturer's standard line.
 - 2. Sound Transmission Class (STC): Minimum 54 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft.
 - 3. Surface Burning Characteristics of Panel Finish: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.
 - 4. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.
- B. Panel Construction:
 - 1. Panel Frame: 16-gage formed steel with overlapped and welded corners.
 - a. Top channel reinforced to support suspension system components.
 - 2. Panel Skins: Steel sheet, 4.25 inch thick.
 - a. construction. 21-gage steel construction.
 - b. Panel skins shall be lock formed and welded directly to the frame for unitized construction. 21-gage steel construction.
 - 3. Core: Fiberglass construction utilizing manufacturer's standard fabrication methods.
- C. Core: 16 gage formed sheet steel frame top, bottom, jambs, and intermediates; welded construction, internally reinforced at suspension points, with acoustical insulation fill.
 - 1. Factory applied surface finish.
 - 2. Trim: Trimless. Wrap surface covering around panel edge and into astragal for fine line panel joint.
 - 3. Hinges: Full leaf butt hinges attached directly to panel with welded hinge anchor plates within panel. Provide reinforcing backer plate welded to frame for attachment of hinges.
 - 4. Panel to Panel Seals: Grooved and gasketed astragals; continuous flexible ribbed vinyl seal fitted to panel edge construction. Provide wall mounted interlocking jamb at each wall.
- D. Track: Minimum 11 gage roll-formed steel track, supporting the load-bearing surface of the track, connected to structural support by pairs of threaded rods.
 - 1. Exposed Track Soffit: Steel, integral to track, prefinished.
 - 2. Products:
 - a. Hufcor: #11 Track.
 - b. Modernfold: #17 Track.
- E. . Carriers: Provide 2 each - Ball bearing, steel 4-wheeled trolley carriers at top of every individual panel, sized to carry imposed loads, with threaded pendant bolt for vertical adjustment.

- F. Carriers: One all-steel trolley with steel tired ball bearing wheels per panel, except hinged panels.
- G. Acoustic Top and Bottom Seals: 2-inch automatic bottom seals and fixed bulb/two finger top seals. Continuous contact sweep bottom seals are not permitted.
- H. Acoustic Jamb Seals: Flexible acoustic seals at jambs at each wall.
- I. Hardware: Latching door handles of cast steel, satin chrome finish; pull bars; and all other hardware for a complete installation.
- J. Acoustic Wall Panel - Fabric Covered Tackboard: Natural cork tackboard with fabric covering; 1/4 inch thick; color as selected from manufacturer's standard range for fabric manufacturer, style, and color.
- K. Acoustic Sealant: Partition manufacturer's standard type .

2.03 MATERIALS

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify track supports are laterally braced and will permit track to be level within 1/4 inch of required position and parallel to the floor surface.
- C. Verify floor flatness of 1/8 inch in 10 feet, non-cumulative.
- D. Verify wall plumbness of 1/8 inch in 10 feet, non-cumulative.

3.02 INSTALLATION

- A. Install partition in accordance with manufacturer's instructions and ASTM E557.
- B. Fit and align partition assembly and pass door level and plumb.
- C. Lubricate moving components.
- D. Install acoustic sealant to achieve required acoustic performance.
- E. Coordinate electrical connections.

3.03 ADJUSTING

- A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.
- B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.
- C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

- A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

- A. Demonstrate operation of partition and identify potential operational problems.
- B. Training: Provide a minimum of 2 hours of training on operation, maintenance and repair.

END OF SECTION

**SECTION 10 2600
WALL AND DOOR PROTECTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Corner guards.
- B. Protective wall covering.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Blocking for wall and corner guard anchors.
- B. Section 09 2116 - Gypsum Board Assemblies: Placement of supports in stud wall construction.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- B. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2020.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.
- C. Shop Drawings: Include plans, elevation, sections, and attachment details.
- D. Samples: Submit samples illustrating component design, configurations, joinery, color and finish.
- E. Manufacturer's Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wall and door protection items in original, undamaged protective packaging. Label items to designate installation locations.
- B. Protect work from moisture damage.
- C. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Corner Guards:
 - 1. Construction Specialties, Inc; Acrovyn Solid Color and Chameleon Corner Guards: www.c-sgroup.com/#sle.
 - 2. Wall Guard: www.wallguard.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Protective Wall Covering:
 - 1. Construction Specialties, Inc; Acrovyn Solid Color Wall Protection: www.c-sgroup.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PRODUCT TYPES

- A. Corner Guards: Surface Mounted (CG-1): Stainless steel, Type 304, number 4 satin finish.
 - 1. Product: Similar to defender Series 2330.2 by Wallguard.com
 - 2. Size: 1 1/2 inch wings
 - 3. Corners: 1/8 inch radius.
 - 4. Thickness: 16 gage.
 - 5. Length: 4 feet
 - 6. Mounting: Adhesive
 - 7. Locations: Where indicated on drawings.
- B. Protective Wall Covering:
 - 1. Product: Acrovyn Wall Panel System by Construction Specialties
 - 2. Material: Engineered PVC Free, High-impact Acrovyn 4000 sheet
 - a. Chemical and stain resistance should be per ASTM D543 standards.
 - b. Thickness: 0.040 inch.
 - 3. Color: As indicated on drawings.
 - 4. Texture: Suede.
 - 5. Length: One piece, as indicated on drawings. Install on wall directly above the wall base.
 - 6. Accessories: Provide manufacturer's standard color-matched trim and moldings where two wall coverings meet each other at outside and inside corners. (CG-1)
 - 7. Mounting: Adhesive.

2.03 FABRICATION

- A. Fabricate components with tight joints, corners and seams.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.
- B. Verify that field measurements are as indicated on drawings.
- C. Verify that substrate surfaces for adhered items are clean and smooth.
 - 1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer. Follow adhesive manufacturer's recommendations for remedial measures at locations and/or application conditions where adhesion test's results are unsatisfactory.
- D. Start of installation constitutes acceptance of project conditions.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to supporting construction.
- B. Install corner guards as indicated on the drawings.
- C. Position protective wall covering no less than 4 inch above finished floor to allow for floor level variation.
 - 1. Full-Height Installation: Establish a plumb line located at edge of starting point of first sheet to ensure following sheets will be installed plumb.
 - 2. Wainscot Installation: Establish a level line at the specified height for entire length of run. Install by aligning top of edge of covering with this line.
 - 3. Apply adhesive with 1/8 inch V-notch trowel to an area of wall surface that can be completed within cure time of the adhesive.
 - 4. Install trim pieces as required for a complete installation. Allow tolerance for thermal movement.

5. Use a roller to ensure maximum contact with adhesive.
6. At inside and outside corners cut covering sheets to facilitate installation of trim pieces or corner guards.

3.03 TOLERANCES

- A. Maximum Variation From Required Height: 1/4 inch.
- B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

3.04 CLEANING

- A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

END OF SECTION

**SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories.
- B. Diaper changing stations.
- C. Janitor room accessories.

1.02 RELATED REQUIREMENTS

Section 01 1000 - Summary: Owner-Furnished Contractor Installed Toilet Accessories

- A. Section 10 2113.19 - Plastic Toilet Compartments.
- B. Section 22 4000 - Plumbing Fixtures: Under-lavatory pipe and supply covers.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.
- C. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015a (Reapproved 2019).
- D. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- E. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017.
- F. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2004, with Editorial Revision (2016).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Bobrick: <https://www.bobrick.com/>
- B. American Specialties, Inc.: <https://americanspecialties.com/>
- C. Substitutions: Section 01 6000 - Product Requirements.
- D. Provide products of each category type by single manufacturer.
- E. Diaper Changing Stations:
 - 1. Bradley Corporation; ____: www.bradleycorp.com/#sle.
 - 2. Koala Kare Products; ____: www.koalabear.com/#sle.
 - 3. Substitutions: 01 6000 - Product Requirements.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.
- B. Stainless Steel Sheet: ASTM A666, Type 304.
- C. Adhesive: Two component epoxy type, waterproof, compliant with VOC limitations.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. Grab Bars: Stainless steel, smooth surface.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force, minimum.
 - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.
 - d. Products:
 - 1) GB-1: 36 inches, similar to American Specialities Inc. 3700 Series.
 - 2) GB-2: 42 inches, similar to American Specialities Inc. 3700 Series.
 - 3) GB-3: 18 inches, similar to American Specialities Inc. 3700 Series.
- B. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, stainless steel spring hinge, removable receptacle.
 - 1. Product: 0473-A manufactured by American Specialities Inc.
- C. Robe Hook: Type 304 Stainless steel, double-prong, suitable for robes, clothing or small bags.
 - 1. Product: 7312 Double Robe Hook manufactured by American Specialities Inc.

2.05 DIAPER CHANGING STATIONS

- A. Baby Changing Station: Recessed folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
 - 1. Material: Stainless steel.
 - 2. Mounting: Recessed.
 - 3. Minimum Rated Load: 200 pounds.
 - 4. Product: Similar to KB310-SSRE manufactured by Koala Kare Products, a Division of Bobrick.

2.06 UTILITY ROOM ACCESSORIES

- A. Utility Hook & Mop Strip with Drying Rod: 0.05 inch thick stainless steel, Type 304, hat-shaped channel.
 - 1. Holders: 6 spring-loaded rubber cam holders.
 - 2. Length: 48 inches.
 - 3. Product: 1315-6 manufactured by American Specialities Inc.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.

- B. Verify exact location of accessories for installation.
- C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.
- D. Verify that field measurements are as indicated on drawings.
- E. See Section 06 1000 Rough Carpentry for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As indicated on drawings

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

**SECTION 10 4300
EMERGENCY AID SPECIALTIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Automated external defibrillators (AEDs).
- B. Automated external defibrillator (AED) cabinets.
- C. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 09 2116 - Gypsum Board Assemblies: Openings and blocking.

1.03 DEFINITIONS

- A. Automated External Defibrillator (AED): A Food and Drug Administration (FDA)-approved portable device, which automatically analyzes the heart rhythm and recognizes the presence of ventricular fibrillation and/or tachycardia. If defibrillation is warranted, the AED automatically charges and prompts (visual and/or audio) the operator to deliver an electrical shock.

1.04 REFERENCE STANDARDS

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a (Reapproved 2017).

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide AED operational features, color and finish, anchorage details, and installation instructions.
- C. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.
- D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Automated External Defibrillators (AEDs):
 - 1. Philips Medical Systems: www.usa.philips.com/#sle.
 - 2. Stryker Corporation; HeartSine samaritan PAD 350P Defibrillator - PAD 350p: www.stryker.com/#sle.
 - 3. ZOLL Medical Corporation: www.zoll.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Emergency Aid Cabinets and Accessories:
 - 1. Activar Construction Products Group, Inc. - JL Industries; LifeStart 1400 Series AED Cabinet: www.activarcpg.com/#sle.
 - 2. Modern Metal Products, a division of Technico, Inc: www.modern-metal.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 AUTOMATED EXTERNAL DEFIBRILLATORS (AEDS)

- A. Automated External Defibrillators (AEDs) - General: FDA approval required.
 - 1. Provide automated external defibrillators (AEDs) as indicated.

2.03 EMERGENCY AID CABINETS

- A. Type: Automated external defibrillator (AED).
- B. Cabinet Construction: Non-fire-rated.

1. Formed stainless steel sheet; 0.036 inch thick base metal.
- C. Cabinet Configuration: Recessed type.
 1. Size to accommodate AED.
 2. Trim: Flat square edge, with 2 inch wide face.
 3. Provide cabinet enclosure with right angle inside corners and seams, and with formed perimeter trim and door stiles.
- D. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with wire pull handle and nylon catch. Hinge door for 180 degree opening with two butt hinges.
- E. Door Glazing: Tempered glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.
- F. Cabinet Mounting Hardware: Appropriate to cabinet, with predrilled holes for placement of anchors.
- G. Finish of Cabinet Exterior Trim and Door: No.4 - Brushed stainless steel.

2.04 ACCESSORIES

- A. Cabinet Door Signage: 'AED" decal, or vinyl self-adhering, prespaced black lettering and identifying graphic in accordance with authorities having jurisdiction (AHJ).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure rigidly in place.
- C. Place AEDs in cabinets.
- D. Cabinet Lettering:
 1. Location: Face of door framing.

3.03 ADJUSTING AND CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Adjust cabinet doors to operate smoothly without binding. Verify that alarms and integral locking devices operate properly.

3.04 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals for closeout submittals.
- B. Demonstrate proper operation of AED to Owner's designated representative.

END OF SECTION

**SECTION 10 4400
FIRE PROTECTION SPECIALTIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
- B. Fire extinguisher cabinets.
- C. Accessories.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. NFPA 10 - Standard for Portable Fire Extinguishers; 2022.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.
- C. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

1.05 FIELD CONDITIONS

- A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers, Cabinets and Accessories:
 - 1. JL Industries, Inc[<>]: www.jlindustries.com.
 - 2. Larsen's Manufacturing Co: www.larsensmfg.com.
 - 3. Potter-Roemer: www.potterroemer.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguisher in each cabinet and elsewhere where shown on Drawings.
- B. Multi-Purpose Dry Chemical Type Fire Extinguishers: Heavy duty steel tank, with pressure gage.
 - 1. UL Class: A:B:C.
 - a. 4-A:60B:C, 10 pound (Similar to JL "Cosmic 10E").
 - 2. Finish: Factory powder-coated; Red.
 - 3. Contents: Fluidized and siliconized mono ammonium phosphate powder; nonconductive and nontoxic

2.03 FIRE EXTINGUISHER CABINETS

- A. Similar to JL Industries Cosmopolitan C1837V17.
- B. Cabinet Configuration: Semi-recessed type.
 - 1. Sized to accommodate extinguisher and accessories.
 - 2. Projected Trim: Returned to wall surface, with ____ inch projection, and ____ inch wide face.
- C. Tub: Primed sheet steel, powder-coated finish.
- D. Door: 0.036 inch thick stainless steel reinforced for flatness and rigidity; latch. Hinge doors for 180 degree opening with continuous piano hinge. Provide nylon catch.

- E. Door Glazing: Tempered glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.
- F. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.
- G. Fabrication: Weld, fill, and grind components smooth.
- H. Finish of Cabinet Exterior Trim and Door: No.4 - Brushed stainless steel.
- I. Finish of Cabinet Interior: White colored enamel.

2.04 FIRE DEPARTMENT LOCK BOX

- A. Manufacturer:
 - 1. KNOXBox www.knoxbox.com/
 - 2. Supra Company, Salem Oregon, 800-547-0252, or approved.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Model: "Supra-Safe" recessed mounted type.
- C. Model: KNOXBox 3200 Series - Surface Mounted
- D. Key to master key system of fire department having jurisdiction at building site.
- E. Recess mount on wall near front entrance, 60 inches above finished floor, where directed by Architect.

2.05 ACCESSORIES

- A. Extinguisher Brackets: Formed steel, galvanized and enamel finished, red.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, maximum 54 inches from finished floor to inside top of cabinet.
- C. Secure rigidly in place.
- D. Place extinguishers in cabinets.

3.03 FIELD QUALITY CONTROL

- A. Ensure that each extinguisher is fully charged, and that inspection of each extinguisher has been performed, as evidenced by the National Association of Fire Equipment Distributors certification tag, just prior to turnover.

END OF SECTION

**SECTION 11 40 00
FOOD SERVICE EQUIPMENT**

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections apply to this Section.

1.02 RELATED WORK

- A. Rough-ins and Final Connections: Service lines from rough-in to point of final connections are provided by plumbing and electrical contractors.
- B. Electrical: Wiring, conduit, fuses, breakers, final disconnects, junction boxes, and other required electrical apparatus not built-in or mounted on equipment are provided by electrical contractor.
- C. Plumbing: Controls, regulators, valves, stops, traps, strainers, checks, grease traps, and fittings not mounted on/in equipment are provided by plumbing contractor.
- D. Mechanical: Ductwork from above finished ceiling to building exhaust and supply fans, flue pipes, exhaust and supply fans for hoods, room ventilation, and air supply blowers are provided by mechanical contractor.
- E. Miscellaneous by General Contractor:
 - 1. Provides backing plates or blocking in wall or ceiling partitions.
 - 2. Provides fittings secured to structural ceiling to accommodate hangers.
 - 3. Provides the forming of architectural enclosures, floor, wall openings or recesses for equipment.
 - 4. Caulks and seals Cold Storage Room floor sections to building floor.
 - 5. Finishes floors (masonry or poured-in-place) in cold storage rooms, concrete curbs and pads.

1.03 DEFINITIONS

- A. Furnish - Supply and deliver to Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- B. Install (set in place) - Work at Project Site, including actual unloading, unpacking, assembly, erecting, rigging, placing, anchoring, applying, finishing, curing, protecting, cleaning, and similar operations, ready for final utility connections by other Sections as appropriate.
- C. Coordinate – Relay required information requested by other trades to ensure they are able to correctly perform their work related to the food service or laundry equipment installation.
- D. Provide - Furnish and install complete, ready for intended use.
- E. Contractor - All references to the Contractor in this Section 114000 shall refer to the Kitchen Equipment Contractor. Reference to any other Contractor shall be specific, such as General Contractor, Plumbing Contractor, Electrical Contractor, Architect, designated, etc.
- F. Fabricated Equipment: Constructed to configuration, dimension, detail, and design as shown with materials and workmanship as specified.
- G. Manufactured Equipment: Mass produced and referenced by manufacturer's name and model number.

1.04 LAWS, ORDINANCES AND STANDARDS

- A. STANDARDS: Except as otherwise indicated, comply with the following standards as applicable to the manufacture, fabrication, and installation of the work of this Section:
 - 1. Air Conditioning and Refrigeration Institute (ARI): Comply with the applicable regulations and references of the latest edition of standards for remote refrigeration system(s), components, and installation.

2. American Gas Association (AGA): Comply with AGA standards for gas heated equipment and provide equipment with the AGA seal. Automatic safety pilots shall be provided on all equipment, where available. (Canadian Gas Association or alternate testing lab's seals may be accepted if acceptable to local code jurisdictions.)
3. American National Standards Institute (ANSI): Comply with ANSI Z21-Series standards for gas-burning equipment and provide labels indicating name of testing agency.
4. American National Standards Institute (ANSI): Comply with ANSI B57.1 for compressed gas cylinder connections and with applicable standards of the Compressed Gas Association for compressed gas piping.
5. American National Standards Institute (ANSI): Comply with ANSI A40.4 and A40.6 for water connection air gaps and vacuum breakers.
6. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE): Comply with the applicable regulations and the latest edition of standards for remote refrigeration system(s), components, and installation.
7. American Society of Mechanical Engineers (ASME): Comply with ASME Boiler Code requirements for steam generating and steam heated equipment and provide ASME inspection, stamp, and registration with National Board.
8. American Society for Testing and Materials (ASTM): Comply with ASTM C1036 for flat glass.
9. American Society for Testing and Materials (ASTM): Comply with ASTM C1048 for heat-treated flat glass – Kind HS, Kind FT coated and uncoated glass.
10. American Welding Society (AWS): Comply with AWS D1.1 structural welding code.
11. National Electric Code (NEC): Comply with NFPA Volume 5 for electrical wiring and devices included with food service equipment, ANSI C2 and C73, and applicable NEMA and NECA standards.
12. National Electrical Manufacturers Association (NEMA): Comply with NEMA LD3 for high-pressure decorative laminates.
13. National Fire Protection Association (NFPA): Comply with the applicable sections of the NFPA for exhaust hood, ventilators, duct and fan materials, hoods fire suppression systems, construction and installation, as well as local codes and standards.
14. National Sanitation Foundation (NSF): Comply with the latest Standards and Revisions established by NSF for equipment and installation. Provide NSF Seal of Approval on each applicable manufactured item and on items of custom fabricated work. (UL Sanitation approval and seal may be accepted if acceptable to local code jurisdictions.)
15. Sheet Metal and Air Conditioning National Association (SMACNA): Comply with the latest edition of SMACNA guidelines for seismic restraint of kitchen equipment and applicable local regulatory agencies requirements.
16. Underwriters Laboratories (UL): Provide either UL labeled products for electrical components and assemblies or, where no labeling service is available, "recognized markings" to indicate listing in the UL "Recognized Component Index". (Canadian Standards Association or alternate testing lab's seals may be accepted if acceptable to local code jurisdictions.)
17. UL 300 Standard: Wet chemical fire suppression systems for exhaust hoods/ventilators shall comply with these requirements.
18. American with Disabilities Act (ADA): Comply with requirements as applicable to this Project.
19. Refrigeration Service Engineers Society (RSES): Comply with the applicable regulations, the latest edition of standards for remote refrigeration system(s), components and installation, and the 1995 requirements of the Montreal Protocol Agreement.
20. All refrigerants used for any purpose shall comply with the 1995 requirements of the Montreal Protocol Agreement and subsequent revisions and amendments. No CFC refrigerants shall be allowed on this Project.
21. All refrigeration components installation, repairs, and/or associated work on any refrigeration system, self-contained or remote, shall be performed by a Certified Refrigeration Mechanic.

22. Comply with all applicable local codes, standards and regulations, and any special local conditions (example only: City of Los Angeles Testing Lab requirements or seismic standards compliance).
23. Jails, prisons, and all detention facilities shall comply with Correctional Standards as applicable to the specific Project. Verify the level of security and construction required with the Project Architect and provide all items in compliance. As a minimum, no part or component of any item provided shall be easily removable and used as a weapon.
24. Subway grating installed in floor drain troughs must meet IBC 1104.3.1 standards for maximum opening sizes in grates.
25. Confirm all drawings, specifications, and project documentation meet all federal, state, and local codes and regulations.

1.05 CONTRACTOR QUALIFICATIONS

- A. In addition to requirements of Related Sections 1.02, submit evidence of compliance with the following qualifications and conditions:
 1. Five (5) years minimum continuous operation under the same company name and ownership.
 2. Evidence of Company's financial stability and financial ability to complete this Project without endangering that stability.
 3. List a minimum of comparable size and scope projects completed in the last five (5) years with Owner's contact name and telephone number.
 4. Have manufacturer's authorization to purchase, distribute, and install all items specified with this Project.
 5. Maintain a staff or have access to personnel with a minimum of five (5) years' experience in the installation of comparable size and scope projects, and meeting NSF standards and requirements. (UL Sanitation standards and requirements may be accepted if acceptable to local code jurisdictions.)
 6. Maintain or have access to a fabrication shop meeting NSF standards and labeling requirements. (UL Sanitation approval and seal may be accepted if acceptable to local code jurisdictions.) If other than the Contractor's own fabrication shop, they shall have five (5) years minimum experience in the fabrication of comparable size, scope, and level of quality projects. The Contractor shall submit their company name and credentials to the Architect, who shall have the right of approval or disapproval
 7. Maintain a staff or have access to personnel experienced in the preparation of professional style shop drawings and submittals.
 8. Maintain or have access to manufacturer's authorized service personnel together with readily available stock of repair and replacement parts.
 9. Any sub-Contractor employed by Contractor for this Project shall comply with the same qualification requirements.

1.06 SUBSTITUTIONS

- A. Refer to Section 01 25 00 – Substitution Procedures for Substitution Request requirements.

1.07 APPROVED SUBSTITUTIONS AND/OR LISTED ALTERNATES

- A. Substitutions approved as noted in article entitled "SUBSTITUTIONS" above and/or any Listed Alternate Manufacturers listed in these Itemized Specifications or added by Addendum may be utilized in lieu of the primary specified manufacturer with the following conditions and understanding:
 1. The Project Documents are designed and engineered using the primary specified manufacturer and model. The Contractor shall assume total responsibility for any deviations required due to the utilization of a substitution/alternate manufacturer or model including, but not limited to, fitting alternates into the available space, providing directions for required changes, and assuming any and all associated costs for utility, building, food service design, architectural, or engineering changes directly or indirectly related to the substitution.

2. The Contractor shall be responsible for supplying the model, which is equal to the primary specified model in regard to general function, features, options, sizes, accessories, utility requirements, finish, operation, and listing approvals. If the Owner or their appointed representative determines at any time during the construction and installation, prior to the final acceptance of the Project, that the substitution/alternate model submitted is not equal to the primary specified model, the Contractor shall assume all associated cost and implications required to replace the model submitted with the correct model.
3. The bid proposal shall clearly state any substitutions/alternates which will be utilized, including the manufacturer and model number. The proposal shall also include a data sheet for each substitution/alternate with any and all deviations between the primary specified manufacturer and the substitution/alternate manufacturer itemized and listed on the data sheet. The manufacturers' cut sheets are not acceptable as a substitute for the data sheet. Complex alternates, such as utility distribution systems, exhaust hoods, ventilators, etc., shall include a shop drawing specific to the Project.
4. Inclusion of an alternate manufacturer in the Itemized Specifications is not intended to indicate that there is an equal alternate unit to match every primary specified unit. It shall be the responsibility of the Contractor to ensure that the alternate unit submitted matches the primary specified unit and meets the other conditions, as stated above.
5. Manufacturers not approved as substitutions or listed as a Listed Alternate will not be permitted unless submitted for prior approval, as described above and in the General and Supplementary Conditions and applicable Division-1 Specifications Sections.
6. Submittal of a substitution/alternate manufacturer or model shall indicate agreement to the above stated conditions. Solely at the Owner's discretion, failure to comply with any of these conditions or to supply complete and correct data information shall result in the Contractor being required to provide the primary specified manufacturer at no additional cost to the Owner or to adjust the Contract cost.

1.08 DISCREPANCIES

- A. Where discrepancies are discovered between the drawings and the specifications regarding quality or quantity, the higher quality or the greater quantity shall be included in the Bid Proposal. The Contractor shall notify the Architect, in writing, of any discrepancies discovered and await clarification prior to proceeding with the items or areas in question.

1.09 SUBMITTALS

- A. The Contractor shall review all submittals for basic compliance with the Contract Documents and correct as required prior to submitting to the Design Team (Architects/Engineers/Consultants/Owner) for review. Failure to comply with this requirement, the submission of submittal(s) which are significantly inconsistent with the Contract Documents, or inconsistencies that are discovered during review by a Design Team member shall be justification for reimbursement by the Contractor to the Design Team member's company for the "lost" time or for the time required for a second review.
- B. Rough-In Drawings
 1. Submit electronic PDF file for approval. After approval, reproduce and supply the required number of distribution prints for record and construction purposes.
 2. Submit 1/4 inch (1:50) scale rough-in drawings for approval. These drawings shall be dimensioned from grid lines showing location of ducts, stubs, floor and wall sleeves for ventilation, plumbing, steam, electrical, refrigeration lines, beverage lines, concrete base and curb dimensions as required for equipment so supported.
 3. Site-verify mechanical, electrical and ventilating rough-in and sleeve locations.
 4. The Contractor shall be responsible for the accuracy of the information on their submittals.
 5. In the event rough-ins have been accomplished before the award of this contract, the Contractor shall check the existing facility and make adjustments to their equipment to suit building conditions and utilities, where possible. If not possible, the Contractor shall so state in a letter to the Owner and Architect with reasons and an alternate method and pricing.

- C. Shop Drawings
 - 1. Submit electronic PDF file for approval. After approval, reproduce and supply the required number of distribution prints for record and construction purposes.
 - 2. Submit shop drawings for items of custom fabrication included in this contract. Shop drawings shall be submitted at 3/4 inch (1:20) and/or 1-1/2 inch (1:10) scale and shall show dimensions, materials, details of construction, features and options, installation and relation of adjoining work requiring cutting or close fitting. Shop drawings shall also indicate reinforcements, anchorage and related work required for the complete installation of fixtures.
 - 3. Before proceeding with the fabrication of any item, the Contractor shall be responsible for verifying and coordinating all dimensions and details with site dimensions and conditions.
- D. Product Data Submittal Manuals
 - 1. Submit electronic PDF file of Product Data Submittal Manuals with a cover sheet and detailed information on every item included in this Section for approval. Detailed information shall include, but not be limited to, item number, description, quantity, model numbers, options and accessories provided, exact utility requirements, manufacturer's cut-sheets, reference to specific shop drawings, etc. Distribute one additional copy of installation and start-up instructions to the Installer. Mark each data sheet with the applicable project equipment item number. Each data sheet shall include NEMA plug and receptacle configuration for applicable items, where applicable. Every cover sheet and associated detailed submittal shall provide sufficient and complete information to verify that the Contractor is providing each item in compliance with the Contract documents.
 - 2. Architect review of drawings, shop details, product data brochures, and service and parts manuals are for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the contract documents or departures there from. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing their work in a safe, satisfactory, and professional manner.
- E. LEED Submittals: For components of this section submit the following in compliance with 01 35 00 Sustainable Building Requirements.
 - 1. LEED Submittal Coversheet
 - 2. Low-Emitting Materials Submittal
 - a. EQ Credit Low Emitting Materials: Additional VOC content requirements for wet-applied paints and coatings products applied onsite: Documentation of certification from the manufacturer that the product meets the applicable VOC limits shall comply with VOC limits of authorities having jurisdiction.

1.10 OPERATION AND MAINTENANCE DATA MANUALS

- A. Operation and Maintenance Manuals (Service and Parts Manuals): Three (3) bound sets of manuals shall be furnished for items of standard manufacture on/or before the date of the first event to occur of the following: demo/start-up, start-up for intended use by the Owner/Operator, completion of installation of kitchen equipment contract package, or final acceptance of installation by Owner. Manuals shall be in alphabetical order according to manufacturer, including item numbers and utility options provided for the equipment installed.
 - 1. Installing company's name, address, telephone number, and date of completed installation.
 - 2. Serial numbers of principal pieces of equipment.
 - 3. Part numbers of all replaceable items.
 - 4. Lubrication data and belt sizes.
 - 5. Electrical characteristics including data for motors and heaters.
- B. Service Agency List: Submit a complete list of local service agencies with the service and parts manuals for included manufacturers, complete with telephone numbers for all buy-out equipment installed.

- C. Provide video tapes for maintenance, training, operation, etc. where available from the manufacturer.

1.11 AS-BUILT/ RECORD DOCUMENTS

- A. Maintain one record set of Food service Equipment Plans with any related corrections, revisions, additions, deletions, changes, etc. noted during construction and installation. Provide an "as-built" set in reproducible transparency form and electronic computer disk form.
- B. Provide one (1) final set of Product Data Submittal Manuals with any related corrections, revisions, additions, deletions, changes, etc. noted during construction and installation as a specifications record set.
- C. These documents shall be provided on/or before the date of the first event to occur of the following: demo/start-up, start-up for intended use by the Owner/Operator, completion of installation of kitchen equipment contract package, or final acceptance of installation by Owner.
- D. Provide two (2) final complete set of Submittals to be retained by Architect as a Record Set.

1.12 SCHEDULE

- A. General: Time is of the essence in this agreement. Acceptance constitutes a guarantee that the Contractor can and will obtain materials, equipment, and manpower to permit overall completion of the entire building project on schedule upon notice to proceed. The Contractor shall coordinate their work with the progress schedule, as prepared and updated periodically by the General Contractor or Construction Manager.
- B. The Contractor shall notify the Food Service Consultant and the Architect in writing of anticipated delays not within the realm of control of the Contractor immediately upon the Contractor's realization that delays are imminent.
- C. The Contractor will not be granted relief for failure to meet schedules or failure of manufacturers to meet promised delivery dates unless the Contractor can establish, in writing, that orders were received by the manufacturer with reasonable lead times.
- D. The Contractor shall pay extra charges resulting from special handling or air shipment in order to meet the schedule if insufficient time was allowed in placing factory orders.

1.13 PRODUCT HANDLING

- A. Delivery of Materials: Deliver materials (except bulk materials) in manufacturer's containers fully identified with manufacturer's name, trade name, type, class, grade, size, color, power requirement, if any, and item number.
- B. Storage of Materials, Equipment and Fixtures: Contractor is responsible for receiving and warehousing of equipment and fixtures until ready for installation. The Contractor will store materials, equipment, and fixtures in sealed containers. They shall be stored off the ground and under cover, protected from damage.
- C. Handling Materials and Equipment: The Contractor will verify and coordinate conditions at the building site, particularly door and/or wall openings and passages to assure access for all equipment. Pieces too bulky for existing facilities shall be hoisted or otherwise handled with apparatus as required. All special handling equipment charges shall be arranged for and paid for by the Contractor.

1.14 PRODUCT PROTECTION

- A. The Contractor is responsible to protect their equipment against theft or damage during the progress of the project until final acceptance by the Owner. Items delivered to the job site at the Owner's or Contract Manager's request before the site is ready for installation should be signed for as approved by the Owner or Contract Manager.
- B. The Contractor will use all reasonable means to protect the materials of this Section before, during, and after installation and to protect the associated work and materials of the other trades.

- C. Pre-fabricated walk-in boxes, on-site and installed in advance of the rest of the equipment are not to be used for general storage by other trades and should be locked before leaving the site. Damage and theft resulting from the failure to secure boxes shall be repaired or replaced at the Contractor's own expense. The Contractor shall be available, as needed, to open and secure walk-in boxes for the other trades to perform their work related to these walk-in boxes, within the other trades' schedules as not to delay their work.
- D. Contractor will verify if the flooring is to be acid washed. In the event of this type of cleansing, any equipment constructed of stainless steel shall not be delivered until a minimum of 24 hours after the final cleansing is completed.

1.15 WARRANTY

- A. Work shall be guaranteed against defects for one (1) year from the date of operation of the equipment. The Contractor will provide a written warranty of each component to include work in this Section to cover all testing and re-testing as may become necessary for one year past the Contract final acceptance date. Any equipment, system, or element failing to perform as directed in this Section shall be repaired or replaced at no cost to the Owner (including labor and transportation), excluding replacement cost of damaged components or work caused by misuse of the equipment.
- B. Additional Warranty: Refrigeration systems shall include a start-up and one-year service and maintenance contract in addition to the regular one-year warranty as stated above, plus an additional four-year warranty on sealed portions of condensing units, including refrigerant lost. This shall include all refrigerators, ice cream makers and cabinets, ice makers, freezers, dispensers, walk-in coolers/freezers compressors, and/or any other items with refrigeration system(s).

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design canopy hoods with fire protection system, walk-in cold storage rooms, and seismic restraint of equipment using performance requirements and design criteria indicated, including comprehensive engineering analysis by a qualified professional engineer licensed by the State.
- B. Refer to Sections 01 10 00 – Summary; and 01 40 00 – Quality Requirements for additional requirements regarding Delegated Design.

2.02 EQUIPMENT

- A. Equipment schedule: Refer to schedule on Food service Drawings and Part 2 Itemized Specifications for equipment included in this Section.

2.03 MATERIALS

- A. Metals
 - 1. Stainless Steel: AISI Type 302/304, hardest workable temper, and No.4 directional polish. Standard gauges are noted in these specifications under Heading 2.04; Section B.1.
 - 2. Galvanized Steel Sheet: ASTM A526, except ASTM A527 for extensive forming; ASTM A525, G90 zinc coating, chemical treatment.
Note: Where painted finish is indicated, provide mill phosphatized treatment in lieu of chemical treatment.
 - 3. Steel Sheet: ASTM A569 hot-rolled carbon steel.
 - 4. Galvanized Steel Pipe: ASTM A53 or ASTM A120, welded or seamless, schedule 40, galvanized.
 - 5. Steel Structural Members: Hot rolled or cold formed, carbon steel unless stainless steel is indicated.
Note: Galvanized Finish (G.I.): ASTM A123 hot-dipped zinc coating, applied after fabrication.
- B. Aluminum: ASTM B209B221 sheet, plate and extrusions (as indicated), alloy, temper and finish as determined by manufacture / fabricator, except 0.40-mil natural anodized finish on exposed work unless another finish is indicated.

- C. Plastic Laminate: NEMA LD3, Type 2, 0.050" thick, except Type 3, 0.042" for post-forming smooth (non-textured). Color and texture as selected by the Architect/Interior Designer.
 - 1. Comply with NSF Standard No. 35.
 - 2. Veneered with approved waterproof and heat proof cement. Rubber base adhesives are not acceptable.
 - 3. Applied directly over close grained plywood, such as solid Mahogany or solid Birch, of selected, smooth, sanded stock to ensure a smooth ripple-free laminated surface; or commercial grade furniture particle board, Cortron or equal.
 - 4. If specified plywood or particle board is unavailable, submit specifications and sample of alternate material for approval. If specified for a "wet" area, only marine grade wood products will be approved for these areas.
 - 5. Exposed faces and edges shall be faced with 1/16 inch (1.6mm) thick material. Cover corresponding backs with approved backing and balancing sheet material. No unfinished exposed plywood/particle board will be acceptable.
- D. Hardwood Work Surfaces: Laminated edge grained hard maple (*Acer saccharum*), NHLA First Grade with knots, holes and other blemishes culled out, kiln dried at 8 percent or less moisture, waterproof glue, machined, sanded, and finished with NSF approved oil-sealer.
- E. Solid Surface Material (SSM): Unless otherwise specified, provide 1/2" thick 100% homogeneous filled acrylic material meeting ANSI Z124.6 Type 6, as manufactured by DuPont Company and known as Corian. Color(s) and pattern(s) as selected by the Architect/ Interior Designer.
 - 1. Comply with NSF Standard No. 51.
 - 2. Acrylic adhesive shall be used for all joints.
 - 3. Install directly over 3/4" thick (minimum) substrate of close grained plywood, such as solid Mahogany or solid Birch, of selected, smooth, sanded stock to ensure a smooth ripple-free surface or a commercial grade furniture particle board, Cortron or equal. Provide additional bracing and support as required by the SSM manufacturer.
 - 4. Fabrication shall be by a fabricator trained by DuPont factory authorized training personnel and Certified as a Commercial Corian Fabricator.
 - 5. Installation shall be by an installer trained by DuPont factory authorized training personnel and Certified as a Commercial Corian Installer.
 - 6. All fabrication and installation of Corian and all components attached to or installed in or through Corian shall be in compliance with manufacturer's instructions and the DuPont Corian Food Service Guidelines and Design Manual. Of particular concern are the sections, details, and instructions on the installation of drop-in or built-in hot or cold components.
 - 7. All other Solid Surface Material (SSM), which may be specified by others to be used in food service areas, must comply with NSF certification and ANSI Standard No. 51.
- F. Insulation
 - 1. For low temperature applications, such as ice bins, cold pans, or fabricated under counter freezers, use urethane, rigid board foam or foamed-in-place, not less than 2 inches (50mm) thick, except that vertical surfaces of cold pans and ice bins may be 1 inch (25mm) thick. Insulation shall be bonded at joints to prevent condensation on exterior.
 - 2. For refrigerated applications, such as fabricated undercounter refrigerators, use urethane rigid board foam or foamed-in-place, or Styrofoam rigid board foam 2 inches (50mm) thick, bonded at joints.
 - 3. For heated type applications, such as plate warmers, use block type rock wool, minimum 1 inch (25mm) thick.
 - 4. At counter tops, subject to heat from cooking equipment and refrigeration compressors, use 1 inch (25mm) thick B&Z Products (1-800-999-0890) Marinite I, or equal, to insulate underside of top.
 - 5. Marinite material shall be added between freezer or refrigerator and 14 gauge (2.0) stainless steel top.
 - 6. All insulation shall be fully encased or enclosed.

G. Joint Materials

1. Sealants: 1-part or 2-part, polyurethane or silicone based, liquid elastomeric sealant, non-solvent release type, Shore A hardness of 30, except 45 if subject to traffic. Sealants shall be NSF Listed for use in food zones. Installation shall comply with applicable requirements of NSF Standards.
2. Backer Rod: 3/8 inch or larger joints shall be polyurethane rod stock, larger than joint width.
3. Gaskets: Solid or hollow (but not cellular) neoprene or polyvinyl chloride, light grey, minimum of 40 Shore A hardness, self-adhesive or prepared for either adhesive application or mechanical anchorage.

H. Paint and Coatings

1. Provide the types of painting and coating materials which, after drying or curing, are suitable for use in conjunction with food service, durable, non-toxic, non-dusting, non-flaking, mildew resistant, and comply with governing regulations for food service.
2. All paints and coatings, including accessories, applied on site must comply with the VOC limits, emissions testing and Submittal requirements for IEQ Credit Low-Emitting Materials as specified by authorities having jurisdiction.
3. Galvanize Repair Paint: MIL-P-21035.
4. Sound Deadener: NSF listed sound deadener material such as latex sound deadener for internal surfaces of metal work and underside of metal counters and tables between work top and underbracing.
5. Pretreatment: SSPC-PT2 or PT3, of FS TT-C490.
6. Primer Coating for Metal: FS TT-P-86, type suitable for baking, where indicated.
7. Enamel for Metal: Synthetic type, FA TT-P-491, type suitable for baking, where indicated.

2.04 FABRICATED PRODUCTS

A. Hardware

1. General: Manufacturer's standard, but not less than ANSI 156.9 Type 2 (Institutional), satin finish stainless steel or dull chrome finish on brass, bronze, or steel.
2. Hinged Door Hardware: Hinged doors shall be mounted with heavy duty NSF approved hinges with Component Hardware Group, Model No. P62-1010 pulls, or equal. Catches shall be heavy-duty magnetic type, except as otherwise indicated.
3. Drawer Hardware: Slides to be 200 pounds minimum capacity per pair, 300 series stainless steel, full extension, side-mounting, self-closing type, with stainless steel ball bearings and positive stops, Component Hardware Group Series S52, or equal. Pulls shall be Component Hardware Group, Model No. P62-1 012, or equal.
4. Sliding Door Hardware: Sliding doors shall be mounted on large, quiet ball bearing rollers in 14-gauge (2.0mm) stainless steel overhead tracks and be removable without the use of tools. Bottom of cabinet shall have stainless steel guide-pins and not channel tracks for doors.
5. All hardware shall be identified with manufacturer's name and number so that broken or worn parts may be replaced.

B. Casters

1. Type and size as recommended by caster manufacturer, NSF approved for the type and weight of equipment supported, but not less than 5 inch (127mm) diameter heavy-duty, ball bearing, solid or disc wheel with non-marking grease proof rubber, neoprene or polyurethane tire, unless otherwise specified. Minimum width of tread shall be 1-3/16 inch (30mm). Minimum capacity per caster shall be 250 pounds (113.4kg), unless otherwise noted in itemized specifications.
2. Provide solid material wheels with stainless steel rotating wheel guard.
3. To be sanitary, provide sealed wheel and swivel bearings and polished plated finish per NSF.
4. Unless otherwise indicated, equip each item with two (2) swivel-type casters and two (2) fixed casters. Provide foot brakes on two (2) casters on opposite front corners of equipment.

5. Unless equipment item is equipped with another form of all-around protective bumper, provide circular rotating bumper above each caster, 5 inch (127mm) diameter tire of light grey synthetic rubber (hollow or closed-cell) on cadmium-plated disc.
- C. Plumbing Fittings, Trim and Accessories
1. General: Where exposed or semi-exposed, provide bright chrome plated brass or polished stainless steel units. Provide copper or brass where not exposed.
 2. Vacuum Breakers: Provide with food service equipment as listed in the itemized specifications.
 3. Water Outlets: At sinks and at other locations where water is supplied (by manual, automatic or remote control), furnish commercial quality faucets, valves, dispensers or fill devices of the type and size indicated and as required to operate as indicated.
 4. Waste Fittings: Except as otherwise indicated, furnish 2 inch (50mm) remote-lever waste valve and 3-1/2 inch (89mm) strainer basket.
- D. Electrical Materials
1. General: Provide standard materials, devices and components as recommended by the manufacturer or fabricator, selected and installed in accordance with NEMA standards and recommendations and as required for safe and efficient use and operation of the food service equipment without objectionable noise, vibration and sanitation problems.
 2. Before ordering equipment, confirm pertinent electrical requirements with the serving electrical utility, such as actual voltages available, number of phases and number of wires in the system.
 3. Wire electrical work for fabricated equipment completely to a junction or pull box which is wholly accessible and mounted on the equipment. Wiring shall be labeled for outlet or item served. Verify local requirements for UL Listing on complete assembly and provide if required.
 4. Components shall bear the UL label or be approved by the prevailing authority.
 5. Provide Custom fabricated refrigerator units with vapor tight light receptacles, shatterproof lamps and automatic switches. Conceal wiring.
 6. Controls and Signals: Provide recognized commercial grade signals, on-off push buttons or switches, and other speed and temperature controls as required for operation, complete with pilot lights and permanent signs and graphics to assist the user of each item. Provide stainless steel cover plates at control and signal electrical boxes. Locate controls and switches out of heat zones, in easily accessible locations that preclude accidental contact by employees.
 7. Internal Wiring of Fixtures and Equipment
 - a. The Contractor shall be responsible for internal wiring of electrical devices built into or forming an integral part of fabricated equipment items. Wiring will be in metal conduit, connected to an accessible pull-box or j-box, and tagged for intended use. Refer to Section 26 Specifications for color coding of wiring.
 - b. Each standard item shipped in sections shall be properly connected internally and verified by the Contractor.
 - c. Furnish dish washers and conveyors internally wired to junction box or distribution panel as specified, including push button switches, motors, immersion heaters, solenoids, etc.
 - d. Where light fixtures are specified or detailed as part of counters, furnish and install cases or fixtures, light fixtures, lamps and shields. Provide warm white lamps unless otherwise specified. If fluorescent light fixtures are specified, provide ballasts and include shields. Provide shields for all light fixtures.
 - e. Wiring for built-in strip heaters or immersion-type elements shall be provided as follows:
 - 1) In heat zone: shall have UL approved insulation and be not less than 300-volt rated heat resistant insulation with nickel wire.

- 2) Connection wiring extended in raceway or conduit to junction or pull box shall be not less than 600 volt rated heat resistant insulation covered wire, UL approved, or equal.
- f. Wiring for fabricated refrigerator and freezer cabinets shall be UL approved insulated cable from exterior junction box to internal components, within insulation unless code requires metallic conduit:
 - 1) Conduit shall be Electrical Metallic Tubing, rigid or flexible (Greenfield). For freezer applications, Seal-Tite Flex or approved equal shall be used.
 - 2) Internal wiring shall be UL approved rubber covered 600 volt rated conductor, except door heaters, which shall be Nichrome wire with silicone braided jacket, having resistance of 10.4 watts per lineal foot.
 - 3) Mount convenience outlets, lighting receptacles, (rubber or porcelain) and door switches in approved boxes. Convenience outlets for evaporators shall be twist lock type. Solid connections, as for freezer evaporators, shall be made vapor tight.
- g. Exposed flexible steel conduit on kitchen equipment shall be neoprene jacketed Seal-Tite conduit equal to Anaconda type "UA". UL approved, complete with approved liquid tight connectors on each end, and designed to provide electrical grounding continuity.
- h. Exposed electrical conduit used in kitchen wet area applications, except for flexible connections, shall be rigid galvanized steel. Thin wall conduit (EMT) shall not be permitted for wet areas. Exposed outlet boxes shall be liquid tight type, with threaded hubs.
8. Convenience and Power Outlets
 - a. Make cutouts and install appropriate boxes or outlets in fabricated fixtures, complete with wiring, conduit, outlet and stainless steel cover plate.
 - b. Outlets and plugs shall conform to NEMA standards.
 - c. Electrical outlets and devices shall be first quality "Specification Grade".
 - d. Furnish GFCI outlets where adjacent to sink compartments, as per the National Electrical Code.
9. Plugs and Cords: Where cords and plugs are provided, they shall comply with National Electrical Manufacturer's Association (NEMA) requirements. Indicate NEMA configuration for each applicable item.
10. Heating Equipment
 - a. Install electric and heating equipment as to be readily cleanable or removable for cleaning.
 - b. Steam heated custom fabricated equipment shall be a self-contained assembly, complete with control valves located in an accessible position.
11. Motors: Totally enclosed type, except drip-proof type where not exposed to a dust or moisture condition; ball bearings, except sleeve bearings on small timing motors; windings impregnated to resist moisture; horse-power and duty-cycle ratings as required for the service indicated.
12. Power Characteristics: Refer to Division 26 specifications for project power characteristics. Also, refer to individual equipment requirements, for loads and ratings.

2.05 FABRICATION OF METAL WORK

A. General Fabrication Requirements

1. Remove burrs from sheared edges of metalwork, ease the corners and smooth to eliminate cutting hazard. Bend sheets of metal at not less than the minimum radius required to avoid grain separation in the metal. Maintain flat, smooth surfaces without damage to finish.
2. Reinforce metal at locations of hardware, anchorages, and accessory attachments wherever metal is less than 14 gauge (2.0mm) or requires mortised application. Conceal reinforcements to the greatest extent possible. Weld in place, on concealed faces.

3. Exposed screws or bolt heads, rivets, and butt joints made by riveting straps under seams and then filled with solder will not be accepted. Where fasteners are permitted, provide Phillips head, flat or oval head machine screws. Cap threads with acorn nuts, unless fully concealed in inaccessible construction, and provide nuts and lock washers unless metal for tapping is at least 12 gauge (2.5mm). Match fastener head finish with finish of metal fastened.
 4. Where components of fabricated metal work are indicated to be galvanized and involve welding or machining of metal heavier than 16 gauge (1.6mm), complete the fabrication and provide hot-dip galvanizing of each component, after fabrication, to the greatest extent possible (depending upon available dip-tank sizes). Comply with ASTM A123.
 5. Welding and Soldering
 - a. Materials 18-gauge (1.27mm), or heavier, shall be welded.
 - b. Seams and joints shall be shop welded or soldered as the nature of the material may require.
 - c. Welds must be ground smooth and polished to match original finish.
 - d. Where galvanizing has been burned off, clean and touch up the weld with high grade aluminum paint.
 6. Provide removable panels for access to mechanical and electrical service connections, which are concealed behind or within food service equipment, but only where access is not possible and not indicated through other work.
 7. Closures: Where ends of fixtures, splash backs, shelves, etc., are open, fill by forming the metal or welding sections, if necessary, to close entire opening flush to walls or adjoining fixtures.
 8. Rolled Edges: Rolled edges shall be as detailed, with corners bull nose, ground and polished.
 9. Coved Corners: Stainless steel food service equipment shall have 1/2 inch (13mm) or larger radius coves in horizontal and vertical corners, and intersections, per NSF standards.
- B. Metal and Gauges
1. Except as otherwise indicated, fabricate exposed metalwork from stainless steel. Fabricate the following components from the gauge of metal indicated and other components from not less than 20 gauge (0.8mm) metal:

a. Table and counter tops:	14 gauge.
b. Sinks and drain boards:	14 gauge.
c. Shelves:	16 gauge.
d. Front drawer and door panels:	18 gauge (double pan construction).
e. Single pan doors and drawer fronts:	16 gauge.
f. Enclosed base cabinets:	18 gauge.
g. Enclosed wall cabinets:	18 gauge.
h. Exhaust hoods and ventilators:	18 gauge.
i. Pan-type insets and trays:	16 gauge.
j. Removable covers and panels:	18 gauge.
k. Skirts and enclosure panels:	18 gauge.
l. Closure and trim strips over 4" wide:	18 gauge.
m. Hardware reinforcement:	12 gauge.
n. Gusset plates:	10 gauge.
o. Custom channel bases:	14 gauge.
- C. Work-Surface Fabrication
1. Fabricate metal work surfaces by forming and welding to provide seamless construction using welding rods matching sheet metal, grinding and polishing. Where necessary for disassembly, provide waterproof gasketed draw-type joints with concealed bolting.
 2. Reinforce work surfaces 30 inches on center both ways with galvanized or stainless steel concealed structural members. Reinforce edges, which are not self-reinforced, by formed edges.

D. Metal Top Construction

1. Metal tops shall be one-piece welded construction, including field joints. Secure to a full perimeter galvanized steel channel frame cross-braced not farther than 2'-6" (760mm) on center. Fasten top with stud bolts or tack welds. If hat sections are used in lieu of channels, close ends.
2. Use properly designed draw fastening, trim strip, or commercial joint material to suit requirement, only if specified.

E. Structural Framing

1. Except as otherwise indicated, provide framing of minimum 1 inch (25mm) pipe-size round pipe or tube members with mitered and welded joints and gusset plates ground smooth. Provide 14 gauge (2.0mm) stainless steel tube for exposed framing, and galvanized steel pipe for concealed framing.
2. Where indicated, flange rear and end edges up to form splashes integrally with top, with vertical and horizontal corners coved of not less than 1/4 inch (6mm) radius, die formed. Turn back splashes 1 inch to wall across top and ends with rounded edge on break, unless otherwise specified.
3. For die-crimped edges, use inverted "V" 1/2 inch (13mm) deep inside and 2 inch (38mm) deep on outside, unless otherwise shown. For straight down flanges, make 1- 3/4 inch (45mm) deep on outside. For bull nose edges, roll down 1-3/4 inch (45mm).
4. Edges: die-formed, integral with top. For rounded corners, form to 1 inch radius, weld, and polish to original finish.

F. Field Joints: For any field joint required because of size of fixture, use butt-joints, reinforce on underside with angles of same material, bolt together with non-corrosive bolts and nuts, field weld, grind and polish.

G. Pipe Bases: Construct pipe bases of 1-5/8 inch (41mm) diameter 18 gauge (1.2mm) stainless steel tubing. Fit legs with polished stainless steel sanitary adjustable bullet feet to provide for adjustment of approximately 1-1/2 inch (38mm), without exposing threads. Space legs to provide ample support for tops, precluding any possibility of buckling or sagging and in no case more than 6'-0" centers.

H. Legs and Cross-rails

1. Equipment legs and cross rails shall be 1-5/8 inch (41mm), 16-gauge (1.59mm) stainless steel tubing.
2. Welds at cross rails shall be continuous and ground smooth. Please note: tack welds are not acceptable.
3. Camber bottom of legs inward and fit with a stainless steel bullet-type foot with not less than 2 inch (50mm) adjustment. Flanged feet with bolt holes may be required dependent on design applications. Provide proper type feet in compliance with local codes. Use stainless steel in all applications.
4. Peg free standing legs to floor with 1/4 inch (6mm) stainless steel rod.
5. Components
 - a. Stainless Steel Gusset: Stainless steel exterior to fit 1-5/8 inch (41mm) tubing, with Allen screw for fastening and adjustment. Not less than 3 inches (76mm) diameter at top and 3-3/4 inch (95mm) long. Outer shell 16-gauge (1.6mm) stainless steel, reinforced with 12-gauge (2.5mm) mild steel insert welded interior shell, or approved equal.
 - b. Stainless Steel Low Counter Legs: Stainless steel exterior 5-3/4 inch (146mm) minimum, 7 inch (178mm) maximum length with stainless steel 3- 1/2 inch (89mm) square plate with four counter-sunk holes, welded to top for fastening.
 - c. Stainless Steel Adjustable Foot: Stainless steel 1-1/2 inch (38mm) diameter tapered at bottom to 1 inch (25mm) diameter, fitted with threaded cold rolled rod for minimum 1-1/2 inch (38mm) diameter x 3/4 inch (19mm) threaded bushing plug welded to legs, or approved equal. Push-in foot not acceptable.
6. Fasten legs to equipment with gussets, as follows:
 - a. Sinks: Reinforced with bushings and set screw.

- b. Metal Top Tables and Dish Tables: Welded to galvanized steel channels, 14- gauge (1.98mm) or heavier, anchored to top with screws through slotted holes.
 - c. Wood Top Tables: Welded to stainless steel channels, 14-gauge (1.98mm) or heavier, anchored to top with screws through slotted holes.
- I. Shelves
 - 1. Construct solid shelves under pipe base tables of 16 gauge stainless steel, with 1-1/2 inch turned down and under edges on exposed sides, and 2 inch turn up against walls or equipment. Fully weld to pipe legs.
 - 2. In fixtures with enclosed bases, turn up shelves on back and sides with 1/4 inch (6mm) (minimum) radius and feather slightly to ensure a tight fit to enclosure panels.
- J. Sinks
 - 1. Construct sinks of 14 gauge stainless steel with No.4 finish inside and outside.
 - 2. Form back, bottom and front of one piece, with ends and partitions welded into place. Partitions: double thickness, 1 inch minimum space between walls. Multiple compartments shall be continuous on the exterior, without applied facing strips or panels.
 - 3. Cove interior vertical and horizontal corners of each tub not less than 1/4 inch radius, die formed. Outer ends of drain boards to have roll rim risers not less than 3 inches high.
 - 4. Drill faucet holes in splashes 2-1/2 inches below top edge. Verify center spacing with faucet specified.
 - 5. Sink insets shall be deep drawn of 16-gauge (1.59mm), or heavier, polished stainless steel. Weld into sink drain boards with 1-1/2 inch x 1-1/2 inch x 14 gauge stainless steel angle brackets, securely welded to sinks and galvanized cross angles spot welded to underside of drain boards to form an integral part of the installation.
 - 6. The bottom of each compartment shall be creased such as to ensure complete drainage to waste opening. Slope bottom of sink bowls toward outlet.
- K. Drains, Wastes and Faucets
 - 1. Furnish and install T&S Brass faucets model B-3940-01 stainless steel rotary drain assembly with connected overflow assembly, in die-drawn inset type sinks and bain-marie sinks.
 - 2. Other custom fabricated sinks shall be furnished with T&S Brass faucets model B3940-01 stainless steel rotary drain assembly, with S/S cap nut over overflow outlet. Waste connection shall have 2 inch (50mm) external thread size, with 1-1/2 inch (38mm) internal thread size.
 - 3. Rotary Handle: Of sufficient length to extend to front edge of sink. No riveting, screws or soldering permitted to fit drains to sinks, with all parts of drains easily removable for servicing and replacement. Rotary handle bracket to be provided as part of the sink fabrication.
 - 4. Water pans for steam tables shall be fitted with 1 inch (25mm) drains with chrome-plated brass stand pipes.
 - 5. All faucets furnished with equipment included in this Section shall be lead-free and comply with NSF Standard #61, Section #9, such as manufactured by Fisher, Chicago, or T&S. Where the itemized specifications list a faucet by manufacturer and model, the Contractor shall verify that the listed faucet complies with this requirement.
 - 6. If the listed faucet does not comply, the Contractor shall submit similar model which does comply from the same manufacturer where available or from one of the above manufacturers.
- L. Workmanship
 - 1. Best quality in the trade. Field verify dimensions before fabricating, conform all items to dimensions of building, neatly fit around pipes, offsets and other obstructions.
 - 2. Fabricate only in accordance with approved shop drawings, showing pipes, obstructions to be built around, and location of utilities and services.

M. Enclosures

1. Provide enclosures, including panels, housings, and skirts for service lines, operating components and mechanical and electrical devices associated with the food service equipment, except as specifically indicated to be "open".
2. Where equipment is exposed to customer view, enclose of service lines, operating components, and mechanical and electrical devices.

N. Casework

1. Enclosure: except as otherwise indicated, provide each unit of casework (base, wall, overhead and free-standing) with a complete-enclosure metal cabinet, including fronts, backs, tops, bottoms, and sides.
2. Bases shall be made of 18-gauge (1.27mm) stainless steel sheets reinforced by forming the metal.
3. Ends, partitions and shelves are stainless steel.
4. Unexposed backs and structural members are galvanized.
5. Vertical ends and partitions are single wall, with a 2 inch (50mm) face.
6. Sides and through partitions are flush with bottom rail, welded at intersections.
7. Shelves: Provide adjustable standards for positioning and support of shelves in casework, except bottom shelf of cabinet mounted on legs or as specified. Turn back of shelf units up 2 inches and hem. Turn other edges down to form open channel. Reinforce shelf units to support 40 pounds per square foot loading, plus 100 percent impact loading.
8. Bottom front rail of bases set on masonry platform shall be continuously closed and sealed to platform.

O. Doors

1. Metal doors shall be double-cased stainless steel. Outer pans shall be 18-gauge (1.27mm) stainless steel with corners welded, ground smooth and polished. Inner pan shall be 20-gauge (.95mm) stainless steel fitted tightly into outer pan with a sound-deadening material such as Celotex or Styrofoam used as a core. The two pans shall be tack welded together and joints solder filled. Doors shall finish approximately 3/4 inch (19mm) thick and be fitted with flush recessed type stainless steel door pulls.
2. Wood doors shall be fabricated as detailed. If Formica or other plastic surfaces are used, sides and backs must be laminated.
3. Hinged doors shall be mounted on heavy-duty NSF approved hinges, or as noted on plans or specifications.

P. Drawer Assemblies

1. Assemblies shall consist of removable drawer body mounted in a ball bearing slide assembly with fully enclosed housing.
2. Slide assembly consists of one pair of 200 pound stainless steel roller bearing extension slides, with side and back enclosure panels, front spacer angle, two drawer carrier angles secured to slides and stainless steel front.
3. Drawer bodies for general storage are to be 20 inches x 20 inches (508mm x 508mm), with 18 gauge stainless steel containers.
4. Drawers intended to hold food products shall be removable type with 12 x 20 (305mm x 508mm) stainless steel food pans in a stainless steel assembly.
5. Drawer fronts are double cased, 3/4 inch (19mm) thick with 18 gauge (1.27mm) stainless steel welded and polished front pan. Steel back pan is tightly fitted and tack welded. Sound deaden with rigid insulation material.
6. Provide drawers with replaceable soft neoprene bumpers or for refrigerated drawers, a full perimeter soft gasket.

- Q. Closed Base: Where casework is indicated to be located on a raised-floor base, prepare casework for support without legs and for anchorage and sealant application, as required for a completely enclosed and concealed base.

- R. Support from Floor: Equip floor supported mobile units with casters and equip items indicated as roll-out units with manufacturer's standard one-directional rollers. Otherwise, and except for closed-base units, provide pipe or tube legs with adjustable bullet-design feet for floor supported items of fabricated metalwork. Provide 1-1/2 inch adjustment of feet (concealed threading).
- S. Shop Painting
 - 1. Clean and prepare metal surfaces to be painted. Remove rust and dirt. Apply treatment to zinc coated surfaces which have not been mill phosphatized. Coat welded and abraded areas of zinc coated surfaces with galvanize repair paint.
 - 2. Apply 1.5 mil (dry film thickness) metal primer coating, followed by 2, 1.0 mil (dry film thickness) metal enamel finish coatings.
 - 3. Bake primer and finish coatings in accordance with paint manufacturer's instructions for a baked enamel finish.
- T. Sound Deadening
 - 1. Sound deaden underside of metal tops, drain boards, under shelves, cabinet interior shelves, etc., above the underbracing/reinforcing/framing only.

2.06 FILTER EXHAUST HOODS

- A. Filter Exhaust Hoods
 - 1. 18 Gauge type 304 stainless steel external welded construction, in accordance with the latest edition of NFPA No.96, including all applicable appendices. Exposed welds to be ground and polished.
 - 2. Grease Removal: UL classified, non-adjustable, stainless steel grease filters with drip-channel gutters, drains and collection basins.
 - 3. Light Fixtures: Furnish type of fixture specified. Fixtures shall be UL listed for hoods, NSF approved, with sealed safety lenses and stainless steel exposed conduit for wiring.
 - 4. Exhaust Duct: Furnish welded stainless steel formed duct collars at ceiling or wall duct connections, where exposed. Furnish exposed to view ductwork as specified. Verify size and location of duct connections required in this contract, before fabrication. Other ductwork will be by the Mechanical Section.
 - 5. Fire Extinguishing System: Pre-piped liquid chemical or water fire suppressant system, as specified, complying with applicable local and NFPA regulations. Wet chemical fire suppression systems shall comply with UL 300 Standards.

2.07 REFRIGERATION EQUIPMENT

- A. General
 - 1. Furnish either single or multiple compressor units, as specified or recommended by the manufacturer for the sizes and variations between connected evaporator loads as indicated.
 - 2. Furnish units of the capacities indicated, arranged to respond to multiple-evaporator thermostats and defrosting timers. Include coils, receivers, compressors, motors, motor starters, mounting bases, vibration isolation units, fans, dryers, valves, piping, insulation, gauges, winter control equipment and complete automatic control system.
 - 3. Refrigerant: Pre-charge units with type or types recommended by manufacturer for services indicated, with quick-disconnect type connections where specified, ready to receive refrigerant piping runs to evaporators and (where remote) to condensers. All refrigerant and associated components shall comply with the requirements of the Montreal Protocol Agreement. No CFC refrigerants or associated components shall be allowed on this Project. HFC refrigerants and components shall be used where available. HCFC refrigerants and components, with a minimum 2010 phase-out date, and intermediate replacement refrigerants are to be used only when HFC refrigerants are not available. Contractor shall be responsible for coordinating with manufacturers. Provide refrigerant leak monitoring devices where required by federal, state, or local codes.

4. The minimum outdoor operating ambient temperature for design of units is -10 degrees Fahrenheit, or as applicable for extreme low local conditions. The maximum indoor design temperature for operation of compressor units is 95 degrees Fahrenheit. The maximum outdoor ambient design temperature shall be determined with prevailing conditions at mounting location(s) of compressor(s), such as sun exposure, limited ventilation, high fences/walls, roof color and materials, local climatic extremes, etc., but in no case shall it be less than 100 degrees Fahrenheit.
- B. Components
1. Coils: Coils for fabricated refrigerators shall have vinyl plastic coatings, stainless steel housings and shall be installed in such a manner as to be replaceable.
 2. Expansion Valves: Remote refrigeration system shall be complete with thermostatic expansion valves at the evaporator.
 3. Thermometers
 - a. Fabricated refrigerated compartments to be fitted minimally with a flush dial thermometer, with chrome plated bezels and to be provided as specified.
 - b. Thermometers shall be adjustable and shall be calibrated after installation.
 - c. Thermometers shall have an accuracy of ± 2 degrees Fahrenheit (1 degree Centigrade).
 4. Hardware
 - a. Refrigerator hardware for fabricated refrigerator compartments shall be heavy-duty components.
 - b. Self-closing hinges.
 - c. Latches to be magnetic edge mount type, unless specified or detailed otherwise.
 5. Locks
 - a. Doors and drawers for walk-in coolers/freezers and reach-in refrigerated compartments, both fabricated and standard, shall be fitted with cylinder locking type latches and provided with master keys.
- C. Cold Pans: Ice pans, refrigerated pans and cabinets shall be provided with breaker strips, where adjoining top or cabinet face materials, to prevent transfer of cold.
- D. All open top mechanically cooled custom fabricated or standard buy-out refrigerators and/or cold pans shall comply with NSF Standard #7 requirements, as of April 1, 1998. The Contractor shall verify that the specified unit complies with this requirement or submit a similar model, which does comply, from the same manufacturer where available.
- E. Ventilation of Refrigerated Equipment
1. Adequate ventilation shall be provided for custom fabricated equipment with integral refrigeration condensing units, both built-in and drop-in. If flow through ventilation cannot be provided, provide flow direction partitions and an additional fan capable of cooling the condensing unit.
 2. If, in the opinion of the Contractor, additional room ventilation is required to ensure correct operating temperatures of standard buy-out, custom fabricated or remote refrigeration condensing units, or compressor rack assemblies, they shall so state in a letter to the Architect for evaluation and direction.

2.08 MISCELLANEOUS MATERIALS

- A. Nameplates: Whenever possible, locate nameplates and labels on manufactured items, in accessible position, but not within customer's normal view. Do not apply name-plates or labels on custom fabricated work, except as required for compliance with governing regulations, insurance requirements, or operator performance.
- B. Manufactured Equipment Items: Furnish items as scheduled or herein specified. Verify dimensions, spaces, rough-in and service requirements, and electrical characteristics before ordering. Provide trim, accessories and miscellaneous items for complete installation.

- C. Insert Pans
 - 1. General: Provide cut-outs, openings, drawers, or equipment specified or detailed to hold stainless steel insert pans with a full complement of pans as follows:
 - a. One (1) stainless steel, 20-gauge (.95mm) minimum, solid insert pan for each space, sized per plans, details, or specifications.
 - b. Where pan sizes are not indicated in plans, details, or specifications, provide one full-size pan for each opening.
 - c. Provide maximum depth pan to suit application and space.
 - 2. Provide 18-gauge (1.27mm) removable stainless steel adapter bars where applicable.
 - 3. Provide all cut-outs and openings or equipment specified or detailed to hold stainless steel insert pans with a hinged stainless steel removable night cover.
- D. Tray Slides: Before fabrication of counters with tray slides, verify:
 - 1. Size and shape of tray. Edge of tray shall not overhang outer support/slider by more than 2". If edge of tray exceeds this dimension, notify Architect, in writing, for evaluation and adjustment, if necessary.
 - 2. Configuration of corners, turns, and shape of tray slides for proper support and safe guidance of trays.
 - 3. Tray slide capable of supporting 200 pounds per linear foot, live load.
- E. Self-leveling dispensers: Verify type and make of ware, dimensions and weight, request samples from Operator and submit to the dispenser manufacturer for proper sizing and calibration of dispensers.
- F. Carbon dioxide (co') equipment: Where equipment requires connection with compressed co' cylinder for operation, provide proper sized cylinder manifold and control system (integral with equipment) with proper connectors for Department of Transportation (DOT) approved type cylinders, complete with cylinder safety devices and supports.
- G. Reasonable quietness of operation of equipment is a requirement. The Kitchen Equipment Contractor will be required to replace or repair any equipment producing out-of-the-ordinary intolerable noise. This also includes providing and installing bumpers and gaskets for doors and drawers on fabricated and standard manufactured items and sound insulation where feasible.

2.09 ITEMIZED SPECIFICATIONS

- A. Refer to the following pages for specific specification information on each item included in this Section.

ITEM 1 DRY STORAGE SHELVING: 1 LOT REQUIRED

- A. Metro, Super Adjustable Super Erecta super adjustable stainless steel shelving. Shelf sections shall be five tier high using individual posts with adjustable feet and top caps equally spaced over 86 inch stainless steel posts with bottom shelf located 8 inches above finished floor. Install in sizes and configuration as shown on Sheet FS101.
- B. Verify room size before ordering.

ITEM 2 CUBE ICE MACHINE WITH BIN: 1 REQUIRED

- A. Scotsman, model CU0715MA-1 with the following:
 - 1. Include SSM1-P water filtration system. Locate system in easy to access location.
- B. Install assembly complete.

ITEM 3 WALK-IN COLD STORAGE ROOMS: 2 REQUIRED

- A. Imperial Brown Manufacturing, modular sandwich panel (Hybrid Construction design) cold storage rooms complete in configuration shown on Sheet FS101. Each room shall incorporate the following:

1. Provide G3 cooler and freezer walk-in doors and door frames 36 inch x 78 inch stainless steel inside and out with 14 inch x 14 inch insulated glass window (heated) and 36" high 1/8" polished aluminum diamond tread plate interior and exterior kick plates. Doors hinged as shown on plan. Include Kason #944 deadbolt mortise locksets with interior safety releases, Kason #1229 chrome pull handles, Kason #1094000013 concealed mounting door closers, and Kason #1248 chrome spring assisted hinges (three per door). Hinge doors as shown on plans.
 2. Provide 1/8" polished aluminum diamond tread plate wainscot up to 36" above finished floor (align with top of door wainscot) on exposed exterior face of walk-ins.
 3. Exposed exterior, closure panels, and trim strips to adjacent walls and ceiling shall be 20 gauge stainless steel finish. Exposed interior shall be .040 stucco embossed aluminum except ceiling which shall be .040 aluminum with baked white acrylic finish. Unexposed surfaces shall be 26 gauge galvanized steel.
 4. Finished exterior height of nominal 8 foot-4 inches. Interior height of rooms shall be nominal 8 foot-0 inches. Wall and ceiling insulation shall be 4 inch thick foamed in place, Class 1, low-density urethane insulation.
 5. Install in floor depression complete with 4" prefabricated high density urethane floor panel. Install in recess with 3" concrete topping slab by GC. See Sheet FS301 for depression details.
 6. Install surface mount 4-1/2 inch diameter dial thermometers above each door.
 7. Heated vacuum vent for freezer.
 8. Provide 3/8 inch diameter nylon coil hangers mounted on 3 inch x 3 inch aluminum plates with nuts and retainers to support evaporator hung from ceiling panel.
 9. Furnish penetrations to accommodate all electrical, plumbing, and refrigeration lines. Furnish stainless steel escutcheons.
 10. Provide Keil LED48X754-CL-N LED cooler and freezer ceiling light fixtures as shown on Sheet FS104. Field connections under Division 26. Include lamps.
 11. Modularm 75LCT multi-monitor temp alarm with IP-1 illuminated push button and MD-1 motion sensor mounted at each door.
 12. All electrical conduit shall be run concealed within the walk-in walls or above the ceiling panels (coordinate with electrician).
 13. Provide 6" high stainless steel cove base inside and outside of each walk-in. Seal to wall panels and floor.
 14. Refer to Architectural Room Finish Schedule for cooler/freezer wearing floor inside and out in Division 9.
 15. Sealants for all walk-in panel penetrations: 1-part or 2-part, polyurethane or silicone based, liquid elastomeric sealant, non-solvent release type, Shore A hardness of 30, except 45 if subject to traffic. Sealants shall be N.S.F. Listed for use in food zones. Installation shall comply with applicable requirements of N.S.F. Standards.
- B. Walk-ins shall comply with current state energy codes.
- C. Walk-ins shall be installed by this manufacturer or this manufacturer's certified installer only and must have a minimum of 5 years' experience installing Imperial walk-ins.
- D. Walk-in doors are to be secured in the "open" position until the concrete sub-floor cures and until the manufacturer states that it is safe to close. Oxidized panels will be replaced at the Contractors' expense.

ITEM 4 REFRIGERATION SYSTEMS: 2 REQUIRED

- A. Refrigeration Design Technologies, model ZS1-02Z-CT3-EST Outdoor Air-Cooled Refrigeration system. Refer to sheet FS302 for factory drawing and all system components.
- B. System A: Cooler @ +35°F to +40°F.
 1. Evaporator: Model BEL0060 with ECOSMART Controller + EEV.
 2. Condensing Unit: YB07KA.
- C. System B: Freezer @ -10°F to +0°F.
 1. Evaporator: Model BEL0100 with ECOSMART Controller + EEV.

2. Condensing Unit: Model YF10KAE.
- D. AIR COOLED RACK SYSTEM: The system shall be an "U.L. or E.T.L. Listed" package system for outdoor installation. Pre-wired to main fused disconnect switch and pre-piped for single point connection. External penetrations for ground-mounted installations. Flush mounted internal electrical panel or external. Rack constructed of 16 gauge (or heavier) formed sheet metal parts or structural steel frame, housing to be power coated finish and constructed to prevent any vibration noises. Condensers to be sized for ambient and altitude.
1. Internal piping must meet ASHRAE standards for pressure drop and velocities. All copper piping must have a plastic bushing where secured to a steel support. Air-cooled condenser will be built within main housing. Condenser to be rifled tubing for maximum heat transfer and have Gold coating for long life. Receivers must be before 100% pump down of each system, no matter of the line length. Each suction line will be insulated back to compressor suction valve. Receiver to be insulated/ heated and controlled by a thermostat if ambient drops below 0 degrees F. Rack is supplied under Nitrogen pressure.
 2. Rack is located outside on the roof above the Kitchen. Verify exact location with Architectural plans. Raised pad specified by architectural division.
- E. PARALLEL AND INDIVIDUAL COMPRESSOR SYSTEMS: Parallel Systems will have oil management system with compressor floats, oil separator and reservoir. All coils supplied by factory will be supplied with shipped loose ball valves to be installed by refrigeration contractor. Installing refrigeration contractor must supply ball valves on field fixtures supplied by others.
1. Medium temperature semi-hermetic compressor (System A).
 2. Low temperature semi-hermetic compressor (System B).
 3. All systems will use Copeland Compressors R-448A refrigerant, unless otherwise indicated. Compressors and refrigeration piping will be installed in such a manner as to eliminate noise, and vibration eliminators in refrigeration lines, as needed. Each compressor shall have a high-low automatic reset pressure control. All compressors over five (5) horsepower if semi-hermetic shall have a Sentronic oil failure pressure control.
 4. Each compressor shall have all necessary breakers, wiring and controls for operation for proper operation, a liquid line drier, sight glass, suction line filter/drier and suction accumulator (low temp only) and oil separator when needed (when used must be supplied with a check valve), and crankcase heaters (on all compressors). Freezer time clocks mounted and pre-wired at rack system unless noted on R-1 drawing. Capillary tubes on all controls shall be tightly wrapped and protected with silicone in a manner to eliminate excessive vibration and contact with other metals.
- F. EVAPORATORS: Dual-speed cooling coils shall be direct expansion type of such size and designed as to affect required temperatures, humidity and to meet the application intended. Evaporators used will be all "Underwriters Laboratory Listed or ETL" supplied from factory with an expansion valve, solenoid valve, in line strainer, Eco-Smart Defrost System and, pre-wired and pre-piped under nitrogen pressure as listed in the refrigeration schedule. Each coil will need an electrical circuit from a building panel as listed on the refrigeration schedule. Select Defrost System will allow the coil to defrost only when needed to save energy.
1. The factory will supply coils for the parallel system with ball valves and all coils are shipped under pressure. All other fixtures or coils supplied by others that connect to the parallel the installing contractor to supply ball valves.

- G. **PIPING INSTALLATION:** All field piping installed as per factory standards and the sizing of the piping shall meet proper velocities as per factory standards. Insulation will be foam type 25/50 smoke and fire type. Medium temperature will use 3/4" thick wall, low temperature will use 1" thick wall and drain lines will be 3/4" thick wall. All field piping be installed with plastic bushing wherever steel to copper tubing comes together. Include all labor, material, equipment, tools, refrigerant, oil, and other required accessories for the complete installation of the systems as shown and specified. Interconnection of all accessories accomplished for ease of servicing. Attention given to oil return, refrigerant pressure drops and neatness. Tubing must have minimum of 1/2" per 20' of line length and piping traps every 15' of vertical rise. Placement of all exposed pipes must be approved prior to installation with General Contractor. Spacing of piping hangers to be in accordance with factory standards not to exceeding 8'-0". Furnish manufacturer's dimensional and schematic drawings and wiring diagrams. This entire assembly must be installed by a Licensed Refrigeration Contractor, under the direction of the factory, as a sub-contract to this section of work. 15% Sil-Flos must be used on piping.
- H. **TESTING:** After installation and before charging, evacuate all piping systems to a 500-micron evacuation. After evacuation, charge system with nitrogen and maintain pressure of 150% working pressure for 6 hours. Cap off, install pressure gauge and hold for 24 hours minimum. Re-evacuate, hold for 6 hours, charge and make electronic detector test all joints.
 - 1. Final wiring connections, conduit and pull boxes, will be provided under electrical. See R-1 drawing for wiring schematic for field wiring.
- I. **WARRANTY AND SERVICE:** Included shall be a full one (1) year warranty for all parts by factory and labor on the entire refrigeration package by installing contractor, from the day of final acceptance of the installation as previously specified. Refrigeration Contractor shall also provide an extended one (1) year service and installation warranty on this scope of work. Manufacturer shall also include a five (5) year extended warranty on the compressors for exchange. All defective or replaced parts must be returned to the factory for replacement. Lack of maintenance, nuisance calls or wrong setting of temperature controls at evaporators, are not covered under labor warranty.
- J. Refrigeration system rack is located outside in the service yard as shown on Sheet FS302. Verify location with Architectural plans. Raised pad specified by architectural division.
- K. Computer Monitoring Intelligence Network Controller. Verify Office location.
- L. Where refrigerant suction lines are trapped, use next size smaller pipe in vertical portion of the trap than that indicated so as to acquire sufficient gas velocity for proper oil return.
- M. Provide anti-sweat pipe covering 3/4-inch Armstrong Armaflex or equivalent for suction lines from evaporator to condensing unit.

ITEM 5 WALK-IN FREEZER SHELVING: 1 LOT REQUIRED

- A. Metro, Metroseal 3 Super Adjustable Super Erecta wire shelving. Shelf sections shall be four tier high using 74 inch high individual posts with adjustable feet and top caps. Shelves to be equally spaced with bottom shelf located 8" above finished floor. Install in sizes and configuration as shown on Sheet FS101.
- B. Verify room size before ordering.

ITEM 6 WALK-IN COOLER SHELVING: 1 LOT REQUIRED

- A. Metro, Metroseal Super Adjustable Super Erecta wire shelving. Shelf sections shall be four tier high using 74 inch high individual posts with adjustable feet and top caps. Shelves to be equally spaced with bottom shelf located 8" above finished floor. Install in sizes and configuration as shown on Sheet FS101.
- B. Include 22" x 48" model HP2248PMD dunnage rack.
- C. Verify room size before ordering.

ITEM 7 MANUAL CAN OPENER: 1 REQUIRED

- A. Edlund, model #1 S.

ITEM 8 MOBILE WASTE RECEPTACLES: 2 REQUIRED

- A. Rubbermaid, model FG263200GRAY with FG264000BLA dolly and FG263100GRAY matching lid.

ITEM 9 VEGETABLE PREP SINK TABLE: 1 REQUIRED

- A. Pacific Stainless Products, model DCS-1824-B30 fully welded prep sink table modified to have a marine edge instead of rolled edges. Sink table shall incorporate the following:
 - 1. Fisher Manufacturing, model 53449 spray rinse faucet with 6" swing spout. Include wall bracket.
 - 2. Two Fisher Manufacturing, model 22411 rotary waste assemblies with 14 gauge stainless steel lever waste brackets welded to underside of sink.
 - 3. Two model TMS table mount cantilever shelves over each drainboard with 18" clearance from underside of shelf to table top. Refer to elevations. Seal post penetrations at backsplash.
 - 4. Install Item 7 Manual Can Opener at left end per plan.
 - 5. Stainless steel under shelf below right drain board.
 - 6. Sound deaden underside of top and sink compartments.
- B. Install assembly complete. Clip and seal to wall.

ITEM 10 HAND WASHING SINK: 1 REQUIRED

- A. Advance Tabco, model 7-PS-62. Provide 12" high welded splash shield on left side.
- B. Seal to wall.

ITEM 11 NOT USED

ITEM 12 NOT USED

ITEM 13 CHANNEL GUARDS (FULL WALL HEIGHT): 2 LOT REQUIRED

- A. Fabricate as detailed and construct vertical corner/channel guards and low wall caps of one piece all welded 14 gauge stainless steel. Install in locations shown on Sheet FS101.
- B. Seal guards to walls and at joints as required.

ITEM 14 CANOPY HOOD WITH FIRE PROTECTION SYSTEM: 1 REQUIRED

- A. Captive-Aire, model 5430ND-2, Type I 18 gauge stainless steel exhaust only canopy hood. Refer to Factory Drawing #7598576. The hood shall incorporate the following:
 - 1. DCV-111 in hood mount utility cabinet.
 - 2. Flush LED light fixtures as shown on Captive-Aire factory drawings. Furnish and install lamps.
 - 3. HDMI Light and fan on/off switch to be mounted on wall in location shown on Sheet FS104.
 - 4. TANK Fire Suppression System furnished and installed by Captive-Aire. Install in accordance with NFPA bulletin 96, including all current amendments to protect this hood including surface protection as required. All piping and conduit shall be run concealed in walls or above ceiling, except where exposure is necessary for functional reasons. Exposed piping shall be chrome plated or run in stainless steel sleeves. Include reset relays and manual remote pull station. All contactors are furnished by the Electrical Division for shut down of electric supply to all equipment in the event of system activation. System to be installed inside remote wall mount utility cabinet as shown.
 - 5. Include 18 gauge stainless steel removable closure panels and trim as required to seal hood to ceiling. Verify ceiling height. Submit shop drawings prior to fabrication.
 - 6. Install hood with 80" clearance from finished floor.
- B. Exhaust duct work and fan furnished and installed by Division 23.

ITEM 15 STAINLESS STEEL WALL FLASHING: 1 LOT REQUIRED

- A. Fabricate 20 gauge stainless steel Number 4 finish 1" thick (using mineral wool) wall flashing bonded to gypsum board with heat resistant mastic beginning directly above base tile on wall and terminating 2" above bottom edge of canopy hoods. Flashing shall run full length of canopy hood and full width of wall at east end of hood.
- B. Note: ceiling and wall flashing shall meet Mechanical Code Sections 507.4 and 507.9. Verify all requirements and provide flashing (insulated for 1 hour rating if required) to meet the codes.
- C. Install flashing with no exposed fasteners or screws in interlocking sections of equal lengths. Verify that surfaces are flat and smooth with a maximum variation of 1/16" in 10 feet.
- D. Install assembly complete.

ITEM 16 OPEN BURNER / FLAT TOP RANGE: 1 REQUIRED

- A. Garland model G60-4G36SS. Include the following:
 - 1. T&S Brass, model B-0289 wall mount fill faucet.
 - 2. 6" heavy-duty levelling swivel caster set; front casters with brakes.
 - 3. 48" long gas quick disconnect assembly with cable restraint.
- B. Install complete.

ITEM 17 DOUBLE STACK CONVECTION OVEN: 1 REQUIRED

- A. Garland, model MCO-ES-20S with the following accessories:
 - 1. Swivel casters (with front brakes).
 - 2. Dormont, model RDC36 restraining device.
- B. Install assembly complete.

ITEM 18 COOK'S SUPPORT WORK TABLE: 1 REQUIRED

- A. Pacific Stainless Products, model WKS-9630-IS fully welded "spec line" table with the following accessories:
 - 1. Two model SDAS-202006S stainless steel drawer assemblies as shown.
 - 2. Model TMSS-9612P. Secure to table top.
 - 3. Two under table mount stainless steel electrical receptacle boxes held back 3" from table edge.
 - 4. Flanged stainless steel leg sets.
 - 5. Provide finished cut-out in top for Item 19 cord drop.
 - 6. Sound deaden underside of top.
- B. Install assembly complete.

ITEM 19 MICROWAVE OVEN: 1 REQUIRED

- A. Panasonic, model NE-1054F.

ITEM 20 MEAL DELIVERY CARTS: 4 REQUIRED

- A. GSW, model C-2333.

ITEM 21 NOT USED

ITEM 22 NOT USED

ITEM 23 BAKERS SUPPORT TABLE: 1 REQUIRED

- A. Pacific Stainless Products, model WKS-8430-A0 with the following accessories:
 - 1. Model TMSC-8414 full length cantilever shelf. Install with 18 inch clearance from table top. Seal post penetrations in backsplash.
- B. Install assembly complete.
- C. Clip and seal to wall.

ITEM 24 MOBILE INGREDIENT BINS: 3 REQUIRED

- A. Cambro, model IB32.

ITEM 25 30-QUART MIXER: 1 REQUIRED

- A. Hobart, model HL-300 LEGACY+ with the following accessories:
 - 1. HL300-1STD standard accessory package.
 - 2. Bowl truck.
- B. Install assembly complete.

ITEM 26 FOLD DOWN EYE WASH STATION: 1 REQUIRED

- A. Specified by Plumbing Division.

ITEM 27 DISHTABLE WITH POT WASHING SINKS: 1 REQUIRED

- A. Fabricate as detailed and construct top, integral sinks, and backsplash of one piece all welded 14-gauge stainless steel. Reinforce underside of top with enclosed stainless steel hat sections and mount on a stainless steel leg stand consisting of circular gussets, tubular legs, and adjustable bullet feet. Reinforce legs with 16-gauge stainless steel leg braces as shown. Sound deaden underside of top. Dishtable shall incorporate the following:
 - 1. Fisher Manufacturing, model 53449 pre-rinse faucet with 6" swing spout centered behind single sink. Include wall bracket.
 - 2. Two Fisher Manufacturing, model 53139 splash mount faucets.
 - 3. Four Fisher Manufacturing, model 22411 rotary waste assemblies with 14-gauge stainless steel lever waste brackets welded to undersides of sinks.
 - 4. Pacific Stainless, model WSS7814DD and WSS7214DD wall mount shelves as detailed. Install with 28" clearance to table top. Seal to wall.
 - 5. Provide clearance under drain board for Item 8 Mobile Waste Receptacle.
- B. Install assembly complete. Clip and seal to walls.

ITEM 28 HOSE REEL WITH RECESSED CONTROL CABINET: 1 REQUIRED

- A. Fisher, model 75394 with 35' hose and pro spray valve. Include model 1801 recessed reel rinse control box assembly.
- B. Install in location shown. Coordinate recess in wall with General Contractor.

ITEM 29 UNDERCOUNTER WAREWASHER WITH BOOSTER HEATER: 1 REQUIRED

- A. Jackson WWS, model DishStar HT-E with the following accessories:
 - 1. Drain water tempering kit.
 - 2. Back panel.
- B. Install assembly complete.

ITEM 30 NOT USED

ITEM 31 NOT USED

ITEM 32 MOBILE POT AND PAN SHELVE: 1 REQUIRED

- A. Metro, model PR48VX3 modified to have top shelf with cutting board/tray drying rack and two intermediate and bottom shelves to be flat louvered with 4" high end and back shelf ledges.

PART 3 EXECUTION

3.01 SUPERVISION

- A. A competent supervisor, representing the Contractor, shall be present at all times during progress of the Contractor's work.

3.02 SITE EXAMINATION

- A. Verify site conditions under the provisions of the General Conditions, Supplementary Conditions and applicable provisions of Division 1 Sections. Notify the Architect, in writing, of unsatisfactory conditions for proper installation of food service equipment.
- B. Verify wall, column, door, window, and ceiling locations and dimensions. Fabrication and installation should not proceed until dimensions and conditions have been verified and coordinated with fabrication details.

- C. Verify that wall reinforcement or backing has been provided and is correct for wall supported equipment. Coordinate placement dimensions with wall construction Section.
- D. Verify that ventilation ducts are of the correct characteristics, and in the required locations.
- E. Verify that utilities are available, of the correct characteristics, and in the required locations.

3.03 INSTALLATION

- A. Sequence installation and erection to ensure correct mechanical and electrical utility connections are achieved.
- B. Install items in accordance with manufacturer's instructions.
- C. Set each item of non-mobile and non-portable equipment securely in place, leveled and adjusted to correct height. Anchor to supporting substrate where indicated and where required for sustained operation and use without shifting or dislocation. Conceal anchorages wherever possible. Adjust counter tops and other work surfaces to a level tolerance of 1/16 inch (maximum offset, and plus or minus on dimension, and maximum variation in 2'-0" run from level or indicated slope). Provide anchors, supports, bracing, clips, attachments, etc., as required to comply with the local seismic restraint requirements. The Guidelines for Seismic Restraint of Kitchen Equipment, as prepared for the Sheet Metal Industry Fund of Los Angeles and endorsed by SMACNA, should be followed.
- D. Complete field assembly joints in the work (joints which cannot be completed in the shop) by welding, bolting-and-gasketing, or similar methods as indicated and specified. Grind welds smooth and restore finish. Set or trim flush, except for "T" gaskets as indicated.
- E. Provide closure plates and strips where required, with joints coordinated with units of equipment.
- F. Provide sealants and gaskets all around each unit to make joints airtight, waterproof, vermin-proof, and sanitary for cleaning purposes.
- G. Joints up to 3/8 inch wide will be stuffed with backer rod to shape sealant bead properly, at 1/4 inch depth.
- H. At internal corner joints, apply sealant or gaskets to form a sanitary cove of not less than 3/8 inch radius.
- I. Shape exposed surfaces of sealant slightly concave with edges flush with faces of materials at joint.
- J. Provide sealant filled or gasketed joints up to 3/8 inch joint width. Wider than 3/8 inch, provide matching metal closure strips, with sealant application each side of strips. Anchor gaskets mechanically or with adhesives to prevent displacement.
- K. Treat enclosed spaces, inaccessible after equipment installation, by covering horizontal surfaces with powdered borax at a rate of 4 ounces per square foot.
- L. Insulate to prevent electrolysis between dissimilar metals.
- M. Cut and drill components for service outlets, fixtures, piping, conduit, and fittings.
- N. Coordinate the installation of approved dry pendant sprinkler head in each cooler and freezer. Sprinkler heads should be installed in coolers/freezers only if required by local codes.
- O. Verify and coordinate the mounting heights of all wall shelves and equipment, with equipment located below them for proper clearances.
- P. Coordinate with the Plumbing and Electrical Divisions and provide holes in food service equipment for plumbing and electrical service to and through the fixtures, as required. This includes welded sleeves, collars, ferrules, or escutcheons. Locate these services so that they do not interfere with intended use and/or servicing of the fixture. No alterations of the building are allowed without written permission by the General Contractor and/or Architect. (i.e. – routing refrigerant lines).

- Q. All paints and coatings, including accessories, applied on site must comply with the VOC limits, emissions testing, and Submittal requirements for IEQ Credit Low-Emitting Materials shall comply with VOC limits of authorities having jurisdiction.

3.04 ADJUSTING

- A. Test and adjust equipment, controls and safety devices to ensure proper working order and conditions.
- B. Repair or replace equipment which is found to be defective in its operation, including units which are below capacity or operating with excessive noise or vibration.

3.05 CLEANING AND RESTORING FINISHES

- A. After completion of installation and completion of other major work in food service areas, remove protective coverings and clean food service equipment internally and externally.
- B. Restore exposed and semi-exposed finishes, to remove abrasions and other damages, polish exposed metal surfaces and touch-up painted surfaces. Replace work, which cannot be successfully restored.
- C. Polish glass, plastic, hardware and accessories, fixtures and fittings.
- D. Wash and clean equipment and leave in a condition ready for the Owner to sanitize and use.

3.06 TESTING, START-UP AND INSTRUCTIONS

- A. Delay the start-up of equipment until service lines have been tested, balanced, and adjusted for pressure, voltage and similar considerations and until water and steam lines have been cleaned and treated for sanitation.
- B. Make arrangements for demonstration of food service equipment operation and maintenance in advance with the Owner/Operator.
- C. Demonstrate food service equipment to familiarize the Owner and the Operator on operation and maintenance procedures, including periodic preventative maintenance measures required. Include an explanation of service requirements and simple on-site service procedures as well as information concerning the name, address and telephone number of qualified local source of service. The individual performing the demonstration shall be knowledgeable of operating and service aspects of the equipment.
- D. Provide a written report of the demonstration to the Owner, outlining the equipment demonstrated and malfunctions or deficiencies noted. Indicate individuals present at demonstration.
- E. Final Cleaning: After testing and start-up, clean the food service equipment and leave in a condition ready for the Owner to sanitize and use.

3.07 CLEAR AWAY

- A. Throughout the progress of their work, the Contractor shall keep the working area free from debris and shall remove rubbish from premises resulting from work being done by them. At the completion of their work, the Contractor shall leave the premises in a clean and finished condition.

END OF SECTION

SECTION 11 5213 PROJECTION SCREENS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Front projection screen assemblies.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking in walls and ceilings.
- B. Section 26 0583 - Wiring Connections: Electrical supply, conduit, and wiring for electric motor operated projection screens.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's catalog cuts and descriptive information on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Manufacturer's Qualification Statement.
- D. Operation and Maintenance Data: Provide manufacturer's operation and maintenance instructions.
- E. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver projection screens to project site in manufacturer's original unopened packaging, and inspect for damage and proper size before accepting delivery.
- B. Store in a protected, clean, dry area with temperature maintained above 50 degrees F, and stack in accordance with manufacturer's recommendations.
- C. Acclimate screens to building temperatures for 24 hours prior to installation, in accordance with manufacturer's recommendations.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide 2 year manufacturer warranty for projection screen assembly.

PART 2 PRODUCTS

2.01 FRONT PROJECTION SCREENS

- A. Manufacturers:
 - 1. Bretford: www.bretford.com/#sle.
 - 2. Da-Lite Screen Company: www.da-lite.com/#sle.
 - 3. Draper, Inc : www.draperinc.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Front Projection Screens: Factory assembled unless otherwise indicated.
 - 1. Motorized, matte light diffusing fabric screen, ceiling recessed.
 - 2. Model: Similar to Da-Lite "Tensioned Advantage Electrol".
 - 3. Model: Similar to Da-Lite "Advantage Manual with Controlled Screen Return"

4. Dimensions: As indicated on drawings.
- C. Matte Light Diffusing Fabric: Light diffusing screen fabric; washable, flame retardant and mildew resistant.
 1. Material: Matte white vinyl on fiberglass backing, with nominal gain of 1.0 over viewing angle not less than 70 degrees from axis, horizontally and vertically.
 2. Seams: No seams permitted in fabric up to 96 inch high by 72 inch wide.
- D. Exposed Screen Cases: Steel, with integral roller brackets.
 1. Finish: Baked enamel.
 2. Color: White.
 3. End Caps: Steel; finished to match case.
 4. Provide supports for suspension from ceiling where indicated.
 5. Mounting: Wall.
- E. Concealed-in-Ceiling Screen Cases: Steel, with integral roller brackets.
 1. Door Slat: Self trim; self-closing and -opening.
 2. Case Finish: Baked enamel.
 3. Case Color: White.
 4. End Caps: Steel; finished to match case.
- F. Manually-Operated Screens:
 1. Roller: 1-3/4 inch aluminum; spring loaded with locking device.
 2. Screen Pull: Ring on bottom bar.
 3. Vertical Tensioning: Screen fabric weighted at bottom with steel bar and plastic end caps.
 4. Horizontal Tensioning: Tensioning bar.
- G. Electrically-Operated Screens:
 1. Roller: Steel, 2 inch in diameter, with locking device.
 2. Vertical Tensioning: Screen fabric weighted at bottom with steel bar and plastic end caps.
 3. Horizontal Tensioning: Tab-guided cable system.
- H. Provide mounting hardware, brackets, supports, fasteners, and other mounting accessories required for a complete installation, in accordance with manufacturer's recommendations for specified substrates and mountings.

2.02 ELECTRICAL COMPONENTS

- A. Electrical Components: Listed and classified by UL as suitable for the purpose specified and indicated.
- B. Motors: Direct drive, 110 V, 60 Hz.
 1. Screen Motor: Mounted inside roller; three wire with ground; quick reverse type and lifetime lubricated; equipped with thermal overload cut-off, internal junction box, electric brake, and pre-set accessible limit switches.
 - a. Electrical Characteristics: 1.2 amps.
 - b. Motor mounted on sound absorber.
- C. Controls: Three (3) position control switch with plate.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate is finished and ready to accept screen installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that openings for recessed screens are correctly sized.
- D. Verify type and location of electrical connections.

- E. Do not install projection screens until climate control systems are in place and interior painting and other finishes are completed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions, using manufacturer's recommended hardware for relevant substrates.
- B. Do not field cut screens.
- C. Install screens in mountings as specified and as indicated on drawings.
- D. Install plumb and level.
- E. Install electrically operated screens ready for connection to power and control systems by others.
- F. Adjust projection screens and related hardware in accordance with manufacturer's instructions for proper placement and operation.
- G. Test electrical screens for proper working condition. Adjust as needed.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch up, repair, or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 12 2400 WINDOW SHADES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior manual roller shades.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.

1.03 REFERENCE STANDARDS

- A. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
- B. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films; 2019.
- C. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.
- D. WCMA A100.1 - Safety of Window Covering Products; 2018.
- E. ASTM D4674 – Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; 2002a (Reapproved 2010).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequencing:
 - 1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
 - 2. Do not install shades until final surface finishes and painting are complete.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
- C. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.
- D. Verification Samples: Minimum size 6 inches square, representing actual materials, color and pattern.
- E. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.
- G. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

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

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
- B. Handle and store shades in accordance with manufacturer's recommendations.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:
 - 1. Shade Hardware: One year.
 - 2. Fabric: One years.

PART 2 PRODUCTS

2.01 ROLLER SHADES

- A. General:
 - 1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
 - 2. Provide shade system that operates smoothly when shades are raised or lowered.
- B. Interior Roller Shades Type WS-1 - Manual: Basis of Design: Clutch Operated FlexShade by Draper Inc. www.draperinc.com.
- C. Description - Interior Roller Shades: Single roller, manually operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories.
 - 1. Drop Position: Regular roll.
 - 2. Mounting: Window jamb mounted - inside, between jambs.
 - 3. Size: As indicated on drawings.
 - 4. Fabric: As indicated under Shade Fabric article.
 - 5. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
 - 6. Roller Tubes: As required for type of shade operation.
 - a. Material: Extruded aluminum, clear anodized finish.
 - b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
 - c. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge.
 - 7. Hembars: Designed to maintain bottom of shade straight and flat, selected from manufacturer's standard options.
 - 8. Manual Operation for Interior Shades:
 - a. Clutch Operator: Manufacturer's standard material and design, permanently lubricated.
 - b. Drive Chain: Continuous loop beaded ball chain, 95 lb minimum breaking strength. Provide upper and lower limit stops.
 - c. Chain Retainer:
 - 1) Chain tensioning device complying with WCMA A100.1.
 - 2) Manufacturer's standard clip.
 - 9. Accessories:
 - a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; clear anodized finish.
 - 1) Color: As selected by Architect from manufacturer's full range of colors.
 - b. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets. Match headbox finish.
 - c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

2.02 SHADE FABRIC

- A. Fabric for Light-Filtering Shades: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
 - 1. Type 1: Vinyl / Fiberglass composition, similar to Mermet "E Screen 1%".
 - 2. Performance Requirements:
 - a. Flammability: Pass NFPA 701 large and small tests.
 - b. Fungal Resistance: No growth when tested according to ASTM G21.
 - 3. Openness Factor: 1 percent.
 - 4. Roll Width: As required
 - 5. Color: As selected by Architect from manufacturer's full range of colors.
 - 6. Extent: For use at all WS-1 and WS-2 roller shades.

2.03 FABRICATION

- A. Field measure finished openings prior to ordering or fabrication.
- B. Fabricate shades to fit openings within specified tolerance
 - 1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch space between bottom bar and window stool.
 - 2. Horizontal Dimensions – Inside Mounting: Fill openings from jamb to jamb.
- C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.
- D. Shade measurements shall be accurate to within $\pm 1/8$ " or as recommended in writing by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine finished openings for deficiencies that may preclude satisfactory installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

- A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.
- B. Installation Tolerances:
 - 1. Maximum Offset From Level: 1/16" inch.
- C. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

- A. Clean soiled shades and exposed components as recommended by manufacturer.
- B. Replace shades that cannot be cleaned to "like new" condition.

3.05 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. See Section 01 7900 - Demonstration and Training, for additional requirements.

- C. Training: Train Owner's personnel on operation and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of two hours training by manufacturer's authorized personnel at location designated by the Owner.

3.06 PROTECTION

- A. Protect installed products from subsequent construction operations.
- B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 12 3600 COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work.

1.02 RELATED REQUIREMENTS

- A. Section 06 4100 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- B. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
- C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- F. Installation Instructions: Manufacturer's installation instructions and recommendations.
- G. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Quality Standard: See Section 06 4100.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
 - 1. Laminate Sheet: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
 - a. Manufacturers:
 - 1) Formica Corporation: www.formica.com.
 - 2) Wilsonart: www.wilsonart.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.

- b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - c. Finish: Matte or suede, gloss rating of 5 to 20.
 - d. Surface Color and Pattern: As indicated on drawings.
 - 2. Exposed Edge Treatment: Square, substrate built up to minimum 1-1/4 inch thick; covered with matching laminate.
 - 3. Back and End Splashes: Same material, same construction.
- C. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 - 1. Flat Sheet Thickness: 1/2 inch, minimum.
 - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Manufacturers:
 - 1) Formica Corporation: www.formica.com.
 - 2) Corian: www.corian.com
 - 3) Wilsonart: www.wilsonart.com/#sle.
 - 4) Substitutions: See Section 01 6000 - Product Requirements.
 - b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - c. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
 - d. Color and Pattern: As indicated on drawings.
 - 3. Other Components Thickness: 1/2 inch, minimum.
 - 4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

2.02 MATERIALS

- A. Wood-Based Components: As specified in Section 06 4100.
- B. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- C. Grommets:
 - 1. Utility Grommets: plastic material for cut-outs with removable cap, black color, 3 1/2 inch O.D.; similar to "XG" by Doug Mockett & Company.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 12 5210 UPHOLSTERED SEATING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabric wrapped foam bench seat and back cushions.

1.02 RELATED REQUIREMENTS

- A. Section 06 2000 - Finish Carpentry.

1.03 REFERENCE STANDARDS

- A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of fabric wrapped cushions with size, location and installation of openings and framing as shown on drawings.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's product data for fabric and foam components.
- C. Samples: Submit one sample bench seat cushion, 12 x 18 inch minimum in size, illustrating construction, fabrication and mounting details. Submit two 12 x 18 inch samples of fabric cover material.
- D. Shop Drawings: Complete, detailed layout with complete dimensioning information for fabrication and installation.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Stock Materials: 10 square feet of each kind of fabric.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

1.07 MOCK-UP

- A. Locate where directed.
- B. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver fabric wrapped foam cushions to project site in protective wrappers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: All materials, construction and finishing shall be of the highest quality to produce movable furniture that is equal or superior to the industry standard.
- B. Adhesives, General: Do not use adhesives that contain urea formaldehyde.
- C. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.02 FABRIC

- A. UPH 1 - UPHOLSTRY (COMMONS BENCH & WINDOW NOOK SEAT)
 - 1. Manufacturer: Carnegie; <https://carnegiefabrics.com/>

- a. Style: Siltech Press
 - b. Style number: 6298 | 164
 - c. Color: As indicated on drawings
 - d. Content: Face: 100% Silicone; Back: 100% Polyester Double Knit
 - e. Width: 55"
 - f. Backing: Unbacked
 - g. Finishes: Finish-Free
 - h. Repeat:
 - 1) Approximate Horizontal: None
 - 2) Approximate Vertical: None
 - i. Performance Data
 - 1) Flammability Testing:
 - (a) Pass* - Test Method - California Technical Bulletin 117, Section E.
 - (b) When combined with appropriate components can pass California Technical Bulletin #133, NY and NJ Port Authority and Boston Fire Code assembly tests.
 - 2) Durability:
 - (a) 200,000 Double Rubs - Test Method - Wyzenbeek Abrasion
 - (b) ASTM 3597 - #10 Cotton Duck Abradant*
 - 3) Colorfastness:
 - (a) Light - Class 4 Rating @ 40 hrs.*
 - 4) Cleaning Code: WS; BC
- B. UPH 2 - UPHOLSTRY (WINDOW NOOK SURROUND)**
- 1. Manufacturer: Carnegie; <https://carnegiefabrics.com/>
 - a. Style: Xorel Fractal Emboss
 - b. Style number: 6261 | 700
 - c. Color: As indicated on drawings
 - d. Content: 100% IFR Xorel
 - e. Width: 56"
 - f. Backing: Unbacked
 - g. Finishes: Finish-Free
 - h. Repeat:
 - 1) Approximate Horizontal: None
 - 2) Approximate Vertical: None
 - i. Performance Data
 - 1) Flammability Testing: ASTM E84 Class A
 - (a) Pass* - Test Method - California Technical Bulletin 117, Section E.
 - (b) When combined with appropriate components can pass California Technical Bulletin #133, NY and NJ Port Authority and Boston Fire Code assembly tests.
 - 2) Durability:
 - (a) 100,000 Double Rubs - Test Method - Wyzenbeek Abrasion
 - (b) ASTM 3597 - #10 Cotton Duck Abradant*
 - 3) Colorfastness:
 - (a) Light - Class 4 Rating @ 40 hrs.*
 - 4) Cleaning Code: WS

2.03 FOAM

- A. Hybrid foam: 50% non-petroleum based Polyols, 50% petroleum-based Polyols. Non-petroleum based content shall be derived from a renewable resource such as soy.
 - 1. Seats: 2" 22035CFR hybrid foam base, 1" 18024CFR hybrid foam top layer and side layers.

2. Back: 3/4" 22035CFR hybrid foam base, 3/4" 18024CFR hybrid foam top and side layers.

2.04 ACCESSORIES

- A. Concealed Fasteners: Type recommended by fabricator.
- B. Velcro: Type recommended by fabricator.
- C. Adhesive: Type recommended by fabricator and complying with the project's VOC requirements..

2.05 FABRICATION

- A. Tight/monolithic construction; no loose, semi-attached or attached cushions.
- B. Seat and back are foamed and upholstered individually. All exposed surfaces covered with specified fabric.
- C. All seams shall be reinforced, utilizing heavy duty, commercial quality thread of fiber compatible with upholstery fiber compositions.
- D. Long horizontal edges to be gently rounded with no exposed seams along front, back, top and bottom edges. Side edges to be neatly welted with matching fabric.
- E. All horizontal planes shall be parallel and level for full extent, and at 90 degrees with vertical planes for full extent of all intersections.
- F. Foam shall be cut to crown at seams so that a consistent level at all horizontal and vertical planes is maintained upon foam compression with use.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Do not begin installation until spaces to receive cushions have been completed.
- B. Coordinate with casework manufacturer to prepare mounting surfaces using the methods recommended by the cushion fabricator for achieving the best result for the project conditions.

3.03 INSTALLATION

- A. Install in accordance with fabricator's instructions.
- B. Install cushions as indicated on Drawings, level and plumb, with separate units securely anchored.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 12 9300 SITE FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Bicycle Racks

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product specified, including detailed installation diagrams and recommended installation methods.

PART 2 PRODUCTS

2.01 EXTERIOR BIKE RACKS

- A. Manufacturers: Huntco, Creative Pipe, Life Rax, Eugene Rack Works, Radius, Architectural Specialties, Inc., or approved.
 - 1. Substitutions: See Section 01 6000 - Product Requirements.
- B. Model: Similar to Huntco HP with flange mounting.
- C. Pipe Materials: ASTM A53, Schedule 40 steel pipe, galvanized, hydraulically bent; 2-3/8 inch outside diameter.
- D. Finish: Powder coated, 3-4 mils thick; color as scheduled.
- E. Color: See Color Schedule.
- F. Mounting: Surface mounted with vandal-resistant type fasteners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify locations of site furnishings with Architect prior to installation.

3.02 PREPARATION

- A. Supply items required to be cast into concrete paving with setting templates, to appropriate sections.

3.03 INSTALLATION - GENERAL

- A. Install in accordance with manufacturer's instructions and as shown on Drawings.
- B. Install plumb, and level, accurately fitted, free from distortion or defects.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION