PROJECT MANUAL

TOWN HALL RENOVATIONS

SOUTH HILL, VIRGINIA

ARCHITECT'S PROJECT NO.: 651455

Moseley

ARCHITECT — RICHMOND, VIRGINIA

KILIAN ENGINEERING INC.

MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION ENGINEERS — HENDERSON, NORTH CAROLINA

B & B CONSULTANTS INC.

CIVIL ENGINEER ENGINEERS — SOUTH HILL, VIRGINIA

VOLUME 1 OF 1

NOVEMBER 7, 2025

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INVITATION TO BID

Bid Request No. 2025-12

Sealed bids for construction of the **Town Hall Renovations**, will be received in person, via regular mail by U.S. Postal Service, or via special courier service at **111 E. Danville Street, South Hill, VA 23970**, until but no later than **10:00:00 a.m.**, local prevailing time, **January 12, 2026**, and then publicly opened and read immediately thereafter.

Bids received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. Bidders are responsible for ensuring their Bid is received before the deadline indicated. Bids submitted by telephone, text message, email, or facsimile shall not be accepted.

The Work generally consists of some light demolition and replacing interior finishes like for like including ceilings, floor finishes, wall base, new paint, mechanical, electrical, and plumbing.

A **non-mandatory** pre-bid conference will be held at **10:00 a.m.**, on **December 11, 2025**, at **211 S. Mecklenburg Ave., South Hill, VA 23970**. Pre-bid questions will not be answered at the pre-bid conference; submit questions via the process below.

Responses to any questions/ clarification will be in the form of addenda if required. Questions/clarifications shall be placed by **5:00 p.m. EST** on **December 19, 2025**. Submit questions to kreekes@southhillva.org. Responses will be in the form of addenda if required.

Bidders may obtain Bidding Documents electronically by visiting e-VA or the Town of South Hill website.

Refer to the Instructions to Bidders for bidding procedures and requirements.

Any questions relating to the Bidding Documents shall be directed to **Keli Reekes**, Town Manager, Town of South Hill at kreekes@southhillva.org or (434) 447-3191.

The Town of South Hill does not discriminate against faith-based organizations.

END OF INVITATION TO BID

AIA® Document A701® – 2018

Instructions to Bidders

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

Town Hall Renovations

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

Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA 23970

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

Moseley Inc.
3200 Norfolk Street
Richmond, VA 23230

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.~~Documents, but are subject to and governed by definitions under applicable laws and regulations.

§ 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~~ in conformance with 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.

§ 1.10 A Responsible Bidder means a person or entity that has the capability, in all respects, to perform fully the Contract requirements and the moral and business integrity and reliability that will assure good faith performance.

§ 1.11 A Responsive Bidder means a person or entity that has submitted a Bid which conforms in all material respects to the Invitation to Bid and requirements of the Bidding Documents.

§ 1.12 An informality means a minor defect or variation of a Bid from the exact requirements of the Invitation to Bid and of the Bidding Documents which does not affect the price, quality, quantity or delivery schedule for the goods, services or construction being procured.

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.

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.7 The Bidder has carefully reviewed the Bidding Documents and has verified that all of the Bidding Documents received are complete. The Bidder shall notify the Architect immediately if received Bidding Documents are not complete.

.8 The Bidder has familiarized itself with all applicable federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work; the Bidder has obtained the necessary licenses for bidding, if applicable, and is licensed or certified to perform the Work.

.9 The Bidder shall pay all county, city, state and federal taxes required by laws in effect at the time the Bids are received and resulting from the Work or traceable thereto. Said taxes shall not be in addition to the Contract price between the Owner and the Bidder, as the taxes shall be an obligation of the Bidder and not of the Owner, and the Owner shall be held harmless and indemnified for the same by the Bidder.

.10 The failure or omission of any Bidder to receive or examine any form, instrument, addendum or other documents, or to acquaint itself with conditions existing at the site(s), shall in no way relieve any Bidder from any obligations with respect to its Bid or to the Contract.

.11 The Bidder agrees that its Bid shall be based on products and work indicated in the Bidding Documents.

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.)

§ 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.~~

§ 3.1.2.1 When the Bidding Documents are returned by the Bidders to the Architect or Owner, the shipping or postage shall be prepaid by the Bidder. The Bidder's deposit will not be refunded if the deposit sum is non-refundable as indicated in the Advertisement or Invitation to Bid.

§ 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.

§ 3.1.4.1 Every Bidder is responsible to review all Bidding Documents received to verify that each set contains a complete set of Contract Documents. Any incomplete Bidding Documents shall be immediately returned to the Architect.

§ 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 at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

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§ 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.

§ 3.3.1.1 The Bidder assumes all risks using a price or bid proposal representing a product or Work that is not indicated in the Bidding Documents and, if the Bidder elects to use that product or Work he shall submit it in accordance with the Division 1 requirements, and as stated herein. If that product or Work is rejected, the Bidder shall provide a product or Work indicated in the Bidding Documents at its cost. The Architect and the Owner shall not consider any requests for additional payments to provide the Work as required by the Contract Documents.

§ 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 DELETE THIS PROVISION. MAINTAIN ONLY IF A SUBSTITUTION FORM IS NOT INCLUDED IN THE SPECS 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.)

Copies of the Addendum will be posted electronically and a notice of posting will be sent via facsimile/email to each plan holder of record.

§ 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.

§ 3.4.3.1 Depending on the nature of an Addendum (clarifications, limited scope of revisions, added manufacturers) issued less than four days prior to receipt date, the Architect, in its professional judgment, reserves the right to issue said Addendum without postponement of the bid date. However, if in the professional judgment of the Architect, the information contained in the Addendum would be such that it would be unfair or unreasonable to prepare a bid proposal

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based on the revisions in the Addendum, then the bid date will be postponed to allow distribution of the Addendum and time to prepare a bid proposal.

§ 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.~~Where so indicated by the bid form, all amounts shall be expressed in figures only.

§ 4.1.4 ~~Edits to entries made on paper bid forms must be initialed by the signer of the Bid.~~All changes made by the Bidder to the bid form or outside of the envelope shall be signed or initialed by the Bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in the Bid, may be rejected by the Owner as being incomplete or nonresponsive.

§ 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. If the Bidder does not desire to bid on an Alternate, enter the words "No Bid". If the Owner elects to accept an Alternate, all Bidders submitting a "No Bid" for the Alternate selected by the Owner will be ruled nonresponsive and their Bid will not be considered in the award of the Contract. If the Bidder does not enter an Alternate Bid amount, "No Change", or 'No Bid" for all requested Alternates, and leaves the Alternate information blank, their Bid will be considered nonresponsive and will not be considered in the award of the Contract.

§ 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:~~bid security in the form of either a cashier's or certified check or an acceptable Bid Bond in the amount of five percent (5%) of the Bid amount, and made payable to the Town of South Hill, Virginia . The bid security is a guarantee that if the Contract is awarded by the Owner to the Bidder, the Bidder shall enter into the Contract with the Owner for the Work mentioned in this Bid or forfeit the bid security to the Owner, not as a penalty, but as liquidated damages. No forfeiture under a bid security shall exceed the lesser of (i) the difference between the Bid for which the bid security was written and the next low Bid of another Bidder, or (ii) the face amount of the bid security.

(Insert the form and amount of bid security.)

§ 4.2.2 All bonds shall be executed by a surety company selected by the Bidder which is legally authorized to do business in the Commonwealth of Virginia], and the bond shall be the same in both form as well as substance as AIA Document A310, Bid Bond. The Bidder shall require the attorney-in-fact, who executed the required bond on behalf of the surety company, to affix thereto a certified and current copy of the power of attorney. The bond premium shall be paid by the Bidder and the cost shall be included in the Bid.

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§ 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.)

§ 4.3.1.1 All public contracts with nongovernmental contractors for the purchase or lease of goods, or for the purchase of services, insurance, or construction, shall be awarded after competitive sealed bidding, or competitive negotiation as provided in Virginia Code §2.2-4303, unless otherwise authorized by law. All state public bodies accepting bids or proposals for contracts pursuant to The Virginia Public Procurement Act, Virginia Code §2.2-4300 et seq., shall provide an option to submit bids or proposals through the Commonwealth's statewide electronic procurement system, known as eVA. The Director of the Department of General Services, or his designee, may grant an exemption from such requirement at the request of a state public body and upon a showing of good cause. All local public bodies shall provide an option to submit bids or proposals through eVA or other electronic means. In cases where bids or proposals are submitted electronically, the local public body may also require a certain number of paper submissions for review purposes.

§ 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.

§ 4.3.2.1 The Bidder shall place on the outside of the envelope containing its Bid the following notation: "Contractor License Number _____ and Class of License."

§ 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.

§ 4.3.6 In the solicitation or awarding of Contracts, the Owner shall not discriminate because of the race, religion, color, sex, age, disability or national origin of the Bidder. The Owner welcomes and encourages the participation of small businesses and businesses owned by women and minorities in procurement transactions made by the Owner.

§ 4.3.7 Trade secrets or proprietary information submitted by a Bidder in connection with a procurement transaction, shall not be subject to public disclosure under the Freedom of Information Act; however, the Bidder must invoke the applicable protection, prior to or upon submission of the data or other materials, and must identify the data or other materials to be

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protected and state the reasons why protection is necessary. The Owner will not accept responses to the Invitation to Bid in cases where the Bidder declares the entire response to the Invitation to Bid to be proprietary information. The Bidder must designate, in the smallest increments possible, that part of the Bid which is deemed to be proprietary.

§ 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.~~A Bid may not be modified, withdrawn or canceled by the Bidder after the time and date designated for the receipt of Bids and for sixty-one (61) calendar days thereafter except as provided in subparagraph 4.4.3 of these Instructions to Bidders and each Bidder so agrees in submitting a Bid.

§ 4.4.1.1 A Bid may be modified or withdrawn by the Bidder any time prior to the time and date set for the receipt of Bids. The Bidder shall notify the Owner in writing of its intentions. Such notice shall be in writing over the signature of the person who submitted the original Bid and the notice shall be received and date and time stamped by the Owner on or before the date and time set for the receipt of Bids.

§ 4.4.1.2 Bidders may indicate modifications to Bid amounts by writing the modification on the outside of the sealed envelope containing the Bid and initialing the modification. Only the Bid amount may be modified by this means; no other qualifications may be made.

§ 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:~~A Bidder may withdraw its Bid from consideration if the Bid price was substantially lower than other Bids due solely to a mistake therein, provided the Bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of Work, labor made directly in the compilation of a Bid which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the Bid sought to be withdrawn. If a Bid contains both clerical and judgment mistakes, a Bidder may withdraw its Bid from consideration if the Bid would have been substantially lower than the other Bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of Work, labor or material made directly in the compilation of a Bid which shall be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the Bid sought to be withdrawn.

§ 4.4.3.1 The Bidder shall submit to the Owner its original work papers, documents and materials used in the preparation of the Bid within one (1) day after the date fixed for submission of Bids. Such work papers shall be delivered to the Owner by the Bidder in person or by registered mail at or prior to the time fixed by the Owner for the opening of Bids. The Contract shall not be awarded by the Owner until such period has elapsed. Such mistake shall be proved only from the original work papers, documents, and materials delivered to the Owner as required herein.

§ 4.4.3.2 No Bidder who is permitted to withdraw a Bid shall for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the Contract is awarded or otherwise benefit directly or indirectly from the performance of the Work for which the withdrawn Bid was submitted.

§ 4.4.3.3 If a Bid is withdrawn under authority of this section, the next lowest responsive and responsible Bidder shall be deemed to be the low Bidder.

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

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§ 4.4.3.4 When the procedure set forth in the paragraphs above is utilized, original work papers, documents, and materials used in the preparation of the Bid must be submitted in an envelope or package separate and apart from the envelope containing the Bid marked clearly as to the contents.

§ 4.4.3.5 If the Owner denies the withdrawal of a Bid under the provisions of this section, it shall notify the Bidder in writing stating the reasons for its decision and award the Contract to such Bidder at the Bid price, provided such Bidder is a responsible and responsive Bidder.

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.~~All Bids received on time in accordance with the Bidding Document requirements shall be opened and publicly read aloud. Any Bidder, upon request, shall be afforded the opportunity to inspect Bid records within a reasonable time after the opening of all Bids but prior to award, except in the event that the public body decides not to accept any of the Bids and to reopen the Contract. Otherwise, Bid records shall be open to public inspection only after award of the Contract. Any inspection of procurement transaction records shall be subject to reasonable restriction to ensure the security and integrity of the records.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or not in conformance with requirements of the Bidding Documents is subject to rejection.

§ 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,~~ Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding ~~Documents. Unless otherwise prohibited by law, the~~ Documents and does not exceed the funds available. 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 own best interests.

§ 5.3.1.1 In determining the lowest responsible Bidder, the Owner may consider, among other things, the Bidder's past performance, conduct on other contracts, and other information provided by the Bidder, including in the Contractor's Pre-Qualification Package, if requested.

§ 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.

§ 5.3.3 In case of a tie Bid, preference may be given to goods, services, and construction produced in Mecklenburg County or the Commonwealth of Virginia or provided by persons, firms or corporations having principal places of business in Mecklenburg County or the Commonwealth of Virginia , if such a choice is available; otherwise the tie shall be decided by lot. A Mecklenburg County business may be given preference over a Commonwealth of Virginia business, if such a choice is available.

§ 5.3.4 If a Contract is to be awarded, the Owner will give the Bidder a Notice of Award within sixty (60) calendar days after the day of the Bid opening.

§ 5.4 NEGOTIATION WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

§ 5.4.1 If award of a Contract to the lowest responsive and responsible Bidder is precluded because of limitations on available funds, the Owner reserves the right to negotiate the Bid amount with the lowest responsive, responsible Bidder to obtain a Contract amount within the available funds. The negotiations may involve changes in either the features or scope of the Work. Such negotiations may include reducing the quantity, quality, or other cost saving mechanisms involving items in the Bid amount, including unit prices (if any) and/or allowances (if any) that affect the Bid amount, and/or Alternates (if any).

§ 5.4.2 The Owner shall notify the lowest responsive and responsible Bidder that such a situation exists and the Owner and Bidder shall then conduct their negotiations in person, by mail, by telephone or by any means they find convenient.

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§ 5.4.3 If an acceptable Contract can be negotiated, the changes to the Bid amount and Bidding Documents agreed upon in the negotiations shall be summarized in a "Post Bid Addendum," and included in the Contract.

§ 5.4.4 If the Owner and the lowest responsive and responsible Bidder cannot negotiate a Contract within available funds, the Owner shall terminate negotiations and reject all bids.

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 in writing if either the ~~Owner or Architect,~~ Owner, 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, (1) withdraw the Bid or (2) submit an acceptable substitute person or ~~entity. The Bidder may also submit any required~~ entity with an adjustment in the Base Bid or Alternate Bid to ~~account for~~ cover the difference in cost occasioned by ~~such substitution.~~ such substitution, provided such adjustment in cost is justifiable and reasonable. 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~~ has 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.~~Owner.

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~~ The successful Bidder shall furnish a Performance Bond covering the faithful performance of the Contract and a Payment Bond covering the payment of all obligations arising thereunder. Each bond shall be written for the full value of the Contract, including all adjustments as authorized by Change Order.

§ 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.~~All bonds shall be written by sureties or insurance companies licensed to do business in the Commonwealth of Virginia.

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§ 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.~~bond premiums shall be paid by the successful Bidder and the cost shall be included in the Bid price. Any subsequent bond premium costs shall be as authorized by Change Order.

§ 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 successful 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.~~along with the signed Contract (Agreement) forms and the required Certificate of Insurance to the Owner within fifteen (15) calendar days after the Notice of Award of the Contract.

§ 7.2.2 ~~Unless otherwise provided, the~~ The bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Each bond shall be written for the full amount of the Contract.

§ 7.2.3 The bonds shall be dated on or after the date of the ~~Contract.~~Contract (Agreement).

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

~~**ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS**~~
ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR
§ 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,~~ Unless otherwise required in the Bidding Documents, the Contract for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and ~~Contractor, unless otherwise stated below.~~
~~*(Insert the complete AIA Document number, including year, and Document title.)*~~

~~**.2** AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.~~
~~*(Insert the complete AIA Document number, including year, and Document title.)*~~

~~**.3** AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.~~Contractor Where the Basis of Payment Is a Stipulated Sum.
~~(Insert the complete AIA Document number, including year, and Document title.)~~

~~**.4** Building Information Modeling Exhibit, if completed:~~

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~~.5 Drawings~~ **§ 8.2** The Contractor recognize that time is of the essence and that the Owner will suffer financial loss if the Work is not completed by the Substantial Completion date required or as may be amended by the Contract Documents. Contractor recognizes the delays, expenses and damages that are involved in proving in a legal proceeding the actual loss that may be suffered by the Owner if the Work is not completed on time. Accordingly, the Owner and the Contractor agree, stipulate and fix as liquidated damages if delayed, but not as a penalty, the sum indicated on the Bid Form that the Contractor together with the Contractor's surety shall pay the Owner for each calendar day or part thereof that expires after the date required or as may be amended by the Contract Documents for the Substantial Completion of the Work.

~~**Number** **Title** **Date**~~

~~.6 Specifications~~

~~**Section** **Title** **Date** **Pages**~~

~~.7 Addenda:~~

~~**Number** **Date** **Pages**~~

~~.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.)*~~

~~[ ] The Sustainability Plan:~~

~~**Title** **Date** **Pages**~~

~~[ ] Supplementary and other Conditions of the Contract:~~

~~**Document** **Title** **Date** **Pages**~~

~~.9 Other documents listed below:~~
~~*(List here any additional documents that are intended to form part of the Proposed Contract Documents.)*~~

§ 8.3 The Contractor recognizes that time is of the essence and that the Owner will suffer financial loss if the Work is not completed by the Final Completion date required or as may be amended by the Contract Documents. The Contractor recognizes the delays, expenses and damages that are involved in proving in a legal proceeding the actual loss that may be suffered by the Owner if the Work is not completed on time. Accordingly, the Owner and the Contractor agree, stipulate and fix as liquidated damages if delayed, but not as a penalty, the sum indicated on the Bid Form that the Contractor together with the Contractor's surety shall pay the Owner for each calendar day or part thereof that expires after the date required or as may be amended by the Contract Documents for the Final Completion of the Work.

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I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 14:04:42 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 2018, Instructions to Bidders,other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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BID FORM
TOWN HALL RENOVATIONS
BID REQUEST NO.: 2025-12

DATE: _____

TO: TOWN OF SOUTH HILL, VA
ATTN: KELI REEKES
111 E. DANVILLE STREET, SOUTH HILL, VA 23970

FROM: _____
Bidder's Name

_____
Bidder's Address

_____
Bidder's Address

FOR: TOWN HALL RENOVATIONS – SOUTH HILL, VIRGINIA

Having carefully examined the site, and all of the Bidding and Contract Documents, and in compliance with the "Invitation to Bid" and "Instructions to Bidders," the undersigned proposes to provide all labor, materials, supplies, equipment, services, and perform all Work necessary for the construction of this Project in accordance with the Bid Documents, dated September 29th, 2025, prepared by Moseley Inc.

Complete this Bid Form in blue or black ink or by computer. Discrepancies in the multiplications of units of work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

PART A: BASE BID PRICE:

The Base Bid Price includes all Work required by and in strict accordance with the Bid Documents for this Project, for the Lump Sum of:

$_____(Figures only).

PART B: LUMP SUM ALLOWANCES: (Reference Section 012100 – Allowances)

1. Allowance No. 1: Interior Signage: $3,000.00

TOTAL BASE BID PRICE
(inclusive of Part A Base Bid Price + all Part B Lump Sum Allowances) =

$_____ Figures only.

RECEIPT OF ADDENDA

We acknowledge the receipt of the following Addenda:

Addendum No. _____, dated _____
Addendum No. _____, dated _____
Addendum No. _____, dated _____
Addendum No. _____, dated _____

TIME OF COMPLETION

Based upon a Notice to Proceed within forty-five (45) calendar days from the opening of the bid, Work included in this Contract shall be Substantially Complete no later than sixty (60) days and finally complete no later than thirty (30) calendar days thereafter.

LIQUIDATED DAMAGES

Liquidated Damages (Refer to Supplemental Conditions): $200 per calendar day for failure to achieve the approved Substantial Completion Date.

REGISTRATION

The Undersigned is a licensed Class A Contractor in accordance with applicable state statutes and regulations, as amended, Certificate No. _____, dated ____/____/____. A Class A Contractor License is required for this project.

Indicate whether your business ____is or ____is not located in MECKLENBURG / SOUTH HILL, VA and whether you _____ have or ____ have not obtained a MECKLENBURG / SOUTH HILL license to conduct or engage in this business, trade, or occupation in MECKLENBURG / SOUTH HILL, VA.

A bid by a corporation shall further give the State of incorporation _____, State Corporation Commission ID number _____, and have the corporate seal affixed in the space provided herein.

CERTIFICATION

I certify that the firm name given below is the true and complete name of the Bidder and that the Bidder is legally qualified and licensed, to perform all Work included in the scope of the Contract.

Legal Name of Bidder (Company) _____

Bidder's (Company) Address _____

Corporate
Seal

Signature _____
(Signature of person(s) legally authorized to bind Bidder (Company) to this Contract)

By: _____
(Typed or printed Name(s) of Person(s) Signing)

Title: _____
(Typed or printed Title(s) of Person(s) Signing)

Telephone Number: _____ E-mail: _____
(include Area Code) (of person indicated above)

(This form may be reproduced in exact detail)

END OF BID FORM

PREBID QUESTION FORM

Only questions requiring a modification or interpretation to the Bidding Documents by an addition, deletion, clarification, or correction, will be made by written Addendum. There shall be no response to and no addendum shall be generated with respect to questions that do not require a modification to or an interpretation of the Bidding Documents.

Owner/Architect shall not respond to oral questions/comments and no modifications or interpretations shall be made except in writing in the form of an Addendum. Bidders and Sub-bidders requesting a modification or interpretation by addition, deletion, clarification, or correction of the Bidding Documents shall complete and submit this form which shall reach the Owner no later than 5:00 p.m. EST on December 17, 2025. Use a separate form for each question submitted.

DATE: _____

The following question concerns Drawing (number)_____:

_____

_____

_____

_____

_____

The following question concerns Specifications Section (number) _____, page _____, paragraph _____:

_____

_____

_____

_____

_____

Questions submitted by: _____
Name Organization

Telephone No. (___)_____ e-mail Address: _____

Email PDF version of Form to: Keli Reekes at **kreekes@southhillva.org**

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

To be determined

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA 23970

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)
Town Hall Renovations

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Init.
/
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Signed and sealed this day of ,

	(Contractor as Principal) *(Seal)*
(Witness)	*(Title)*
	(Surety) *(Seal)*
(Witness)	*(Title)*

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Certification of Document's Authenticity

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I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 14:17:08 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A310™ – 2010, Bid Bond,other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A305® – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)

SUBMITTED TO:
(Organization name and address.)

TYPE OF WORK TYPICALLY PERFORMED
(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)

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

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

[ ] Exhibit A – General Information
[ ] Exhibit B – Financial and Performance Information
[ ] Exhibit C – Project-Specific Information
[ ] Exhibit D – Past Project Experience
[ ] Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION
The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

_____ _____
Organization's Authorized Representative Signature **Date**

_____
Printed Name and Title

NOTARY
State of:
County of:
Signed and sworn to before me this day of

_____
Notary Signature

My commission expires:

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 14:19:13 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A305™ – 2020, Contractor's Qualification Statement,other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A305® – 2020 Exhibit A

General Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by and dated the day of in the year
(In words, indicate day, month and year.)

§ A.1 ORGANIZATION
§ A.1.1 Name and Location
§ A.1.1.1 Identify the full legal name of your organization.

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

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

§ A.1.1.4 Identify the address of your organization's principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

§ A.1.2 Legal Status
§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

.1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.

.2 If your organization is a partnership, identify its partners and its date of organization.

.3 If your organization is individually owned, identify its owner and date of organization.

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.4 If the form of your organization is other than those listed above, describe it and identify its individual leaders:

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

§ A.1.3.2 How many full-time employees work for your organization?

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

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§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

§ A.4 REFERENCES

§ A.4.1 Identify three client references:
(Insert name, organization, and contact information)

§ A.4.2 Identify three architect references:
(Insert name, organization, and contact information)

§ A.4.3 Identify one bank reference:
(Insert name, organization, and contact information)

§ A.4.4 Identify three subcontractor or other trade references:
(Insert name, organization, and contact information)

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AIA® Document A305® – 2020 Exhibit B

Financial and Performance Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by and dated the day of in the year
(In words, indicate day, month and year.)

§ B.1 FINANCIAL

§ B.1.1 Federal tax identification number:

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

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization's latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

§ B.1.4 Identify your organization's preferred credit rating agency and identification information.
(Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization's identification number or other method of searching your organization's credit rating with such agency.)

§ B.2 DISPUTES AND DISCIPLINARY ACTIONS

§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than $75,000?
(If the answer is yes, provide an explanation.)

§ B.2.2 In the last five years has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 failed to complete work awarded to it?

.2 been terminated for any reason except for an owners' convenience?

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.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than $75,000?

.4 filed any lawsuits or requested arbitration regarding a construction project?

§ B.2.3 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 been convicted of, or indicted for, a business-related crime?

.2 had any business or professional license subjected to disciplinary action?

.3 been penalized or fined by a state or federal environmental agency?

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AIA® Document A305® – 2020 Exhibit C

Project Specific Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by and dated the day of in the year
(In words, indicate day, month and year.)

PROJECT:
(Name and location or address.)

Town Hall Renovations

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

CONTRACTOR'S PROJECT OFFICE:
(Identify the office out of which the contractor proposes to perform the work for the Project.)

TYPE OF WORK SOUGHT
(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)

CONFLICT OF INTEREST
Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

§ C.1 PERFORMANCE OF THE WORK
§ C.1.1 When was the Contractor's Project Office established?

§ C.1.2 How many full-time field and office staff are respectively employed at the Contractor's Project Office?

§ C.1.3 List the business license and contractor license or registration numbers for the Contractor's Project Office that pertain to the Project.

§ C.1.4 Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

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§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

§ C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

§ C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

§ C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?

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§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.2? If so, identify.

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

§ C.5.2 Surety company name:

§ C.5.3 Surety agent name and contact information:

§ C.5.4 Total bonding capacity:

§ C.5.5 Available bonding capacity as of the date of this qualification statement:

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AIA® Document A305® – 2020 Exhibit D

Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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AIA® Document A305® – 2020 Exhibit E

Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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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)

Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA 23970

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

To be determined

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

Town Hall Renovations

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

Moseley Inc.
3200 Norfolk Street
Richmond, VA 23230

The Owner and Contractor agree as follows.

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.

Init.
/

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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.)

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[ ] 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.)

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User Notes: (927033210)

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.)

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§ 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.)

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§ 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)

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§ 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,~~ AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with ~~a building information modeling exhibit,~~ AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

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,~~ AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the ~~building information modeling exhibit~~ E203-2013 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.)

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[ ] 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)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 14:15:54 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ – 2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum,other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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SECTION 005213.01
FORM OF AGREEMENT EXHIBIT A – INSURANCE & BOND REQUIREMENTS

ARTICLE 1 CONTRACTOR'S INSURANCE & BONDS

1.01 GENERAL

A. Contractor shall provide and maintain insurance and bond coverages per the requirements herein, and in accordance with requirements of Article 11 of AIA Document A201. In the event of overlap or conflict, the A201 shall govern.

B. The Contractor shall provide a summary of insurance coverages on an ACORD 25 Certificate of Insurance (COI) or other industry standard form of certificate.

C. Form of Bond for Payment and Performance Bonds: Document AIA A312; sample form of bond is included in the Bidding and Procurement documents.

D. All insurance and bond coverage shall be provided through a company or companies with an "A" or better rating, and licensed in the state where the Project is located.

E. All General Liability, Automobile, and Umbrella insurance shall designate the Owner, Architect, and Architect's consultants as additional insureds.

F. General Liability shall not exclude explosion (X), collapse (C), or underground (U) coverages.

G. Automobile Liability shall include coverage for Owned, Non-Owned, and Hired autos.

H. The Contractor shall maintain Completed Operations coverage for two (2) years from the date of Substantial Completion.

1.02 INSURANCE COVERAGE LIMITS

A. The Contractor shall provide the following minimum coverages:
   1. Comprehensive General Liability:
      a. $1,000,000 – Each Occurrence.
      b. $500,000 – Damage to Rented Premises.
      c. $10,000 – Medical Expense (Any One Person).
      d. $1,000,000 – Personal and Advertising Injury.
      e. $2,000,000 – General Aggregate.
      f. $2,000,000 – Products and Completed Operations Aggregate Limit.
      g. $100,000 – Fire Damage.
   2. Comprehensive Business Automobile Liability:
      a. $1,000,000 – Each Occurrence.
   3. Worker's Compensation: Per statutory limits of the state where the project is located.
   4. Employer Liability for Participants not covered by Worker's Compensation:
      a. $100,000 – Employer Liability – Each Accident.
      b. $100,000 – Employer Liability – Disease – Each Employee.
      c. $500,000 – Employer Liability – Disease – Policy Limit.
   5. Umbrella Coverage:
      a. $1,000,000 - Each Occurrence.
      b. $5,000,000 - Aggregate.
   6. Builder's Risk:
      a. New Construction (including Additions): The Contractor shall insure 100% of the original Contract amount. Please make sure that you communicate with your risk

management company/insurance company so that you have this coverage lined up before the project begins.

b. Renovations: For renovation of existing structures, the Owner shall provide and maintain Builder's Risk insurance on the existing facility, with the Contractor being responsible for the first $10,000 of any claim.

7. Pollution:
   a. $1,000,000 - Each Occurrence.
   b. $2,000,000 - Aggregate.

1.03 BONDS

A. The Contractor shall provide the following:
   1. Performance Bond: 100 percent of the Contract Sum.
   2. Payment Bond: 100 percent of the Contract Sum.

END OF EXHIBIT A – INSURANCE AND BOND REQUIREMENTS

AIA® Document A312® – 2010

Payment Bond

CONTRACTOR:
(Name, legal status and address)

To be determined

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA 23970

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT
Date:
Amount: $ 0.00
Description:
(Name and location)
Town Hall Renovations

BOND
Date:
(Not earlier than Construction Contract Date)

Amount: $
Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

.2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

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§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

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§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:	_____	Signature:	_____
Name and Title:		Name and Title:	
Address:		Address:	

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification at 14:23:39 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A312™ – 2010, Payment Bond,other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A312® – 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

To be determined

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA 23970

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT
Date:
Amount: $ 0.00
Description:
(Name and location)
Town Hall Renovations

BOND
Date:
(Not earlier than Construction Contract Date)

Amount: $
Modifications to this Bond: ☐ None ☐ See Section 16

CONTRACTOR AS PRINCIPAL	**SURETY**
Company: *(Corporate Seal)*	Company: *(Corporate Seal)*
Signature: _____	Signature: _____
Name and Title:	Name and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

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§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

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§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:	_____	Signature:	_____
Name and Title:		Name and Title:	
Address:		Address:	

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

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_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A201® – 2017

General Conditions of the Contract for Construction

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

Town Hall Renovations

THE OWNER:
(Name, legal status and address)

Town of South Hill, Virginia
211 S. Mecklenburg Avenue
South Hill, VA
23970

THE ARCHITECT:
(Name, legal status and address)

Moseley Inc.
3200 Norfolk Street
Richmond, VA 23230

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

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 Project Manual and 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~~ 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

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produce the indicated results. Notwithstanding such performance, in case of a conflict, disagreement, or ambiguity, provide the better quality of Work. In case of a conflict, disagreement, or ambiguity, provide the greater quantity of Work.

§ 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.

1.2.1.2 Plumbing, Mechanical, Fire Protection and Electrical drawings are diagrammatic, showing general locations and arrangements of piping, wiring, equipment, security and technology, and specialties; not necessarily showing all required offsets, conditions and appurtenances required for maximum practical accessibility for operation, maintenance and clearances. Coordinate this Work in order to achieve the required and intended Work and notify the Architect immediately of conditions which do not comply or will not allow for this condition.

§ 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~~ Unless otherwise required by the Owner and Architect Agreement, 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,~~ 1.7, 1.8, and 1.9 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

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certified or registered mail, or by courier providing proof of ~~delivery.~~delivery, including signature of receiver of such notices.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon ~~written~~ protocols governing the transmission and use ~~of, and reliance on,~~ of Instruments of Service or any other information or documentation in digital form. The parties shall use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data, should such Exhibit be included in the Agreement.

§ 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 and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, 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.

§ 1.9 If such Exhibits are not included in the Agreement, the Architect may, with the concurrence of the Owner, furnish to the Contractor versions of the Instruments of Service in electronic form. The Contract Documents executed or identified in accordance with Section 1.1.1 shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic operations involving computers. The Contractor shall not transfer or reuse Instruments of Service in electronic or machine readable form without the prior written consent of the Architect.

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~~ 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.

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§ 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~~ electronic copy of the Drawings, Specifications, and Addenda issued, **for the purposes of making reproductions pursuant to Section 1.5.2.**

§ 2.3.6.1 At the Architect's sole discretion, selected electronic (CAD) Drawing files may be made available for use by the Contractor after execution of the Contract for Construction, with the exception of civil grading and layout plans, if authorized by the civil consultant. Such electronic files are not part of the Contract Documents. If available, the Architect shall release them to the Contractor subject to the terms and conditions established by the Architect, to which the Contractor must agree without exception prior to release of the electronic files. Refer to **www.moseleyarchitects.com** for the Architect's current Request for Electronic (CAD) Files form, which defines the applicable terms and conditions.

§ 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.

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§ 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~~ Amounts charged to the Contractor may, pursuant to Section 9.5.1, 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.

§ 3.1.4 During the performance of this Contract, the Contractor will include the provisions of the foregoing Sections 3.1.4.1 and 3.1.4.2 in every Subcontract or purchase order of over ten thousand dollars ($10,000.), so that the provisions will be binding upon each Subcontractor or vendor; and furthermore, the Contractor agrees as follows:

.1 The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

.2 The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.

.3 Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting requirements of this section.

.4 The Contractor does not, and shall not during the performance of this Contract, knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

.5 Contractor hereby represents it is organized as a stock or non-stock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership and is authorized to transact business in the jurisdiction where the Project is located as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law.

§ 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,~~ 2.3, 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

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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. 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.

§ 3.2.4 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.

§ 3.2.5 The Owner shall deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's requests for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior correspondence or documentation.

§ 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,~~ appropriate, 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,~~ alternative in writing, 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~~ found to be acceptable 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

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substitutions only with the consent of the Owner, after ~~evaluation~~ review by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.2.1 After the Contract has been executed, the Owner and the Architect will consider a formal request for substitution in lieu of those required by the Contract Documents only under and in addition to, the conditions set forth in the Contract Documents. By making requests for substitutions, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to requirements of the Contract Documents;

.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor is required to provide under the Contract Documents;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract including the Architect's redesign costs, and waives all claims for additional costs and time related to the substitution which subsequently become apparent; and

.4 will coordinate and perform the installation of the accepted substitute, making such changes to the Work as may be required for the Work to be complete in all respects.

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

§ 3.4.4 The Owner shall deduct from the Contract Sum amounts paid to the Architect for the Architect to review the Contractor's proposed substitutions, to make agreed-upon changes in the Instruments of Service, including the Contract Documents, and to provide additional construction phase services made necessary by the Owner's acceptance of such substitutions.

§ 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.

§ 3.6.1 The 179D tax deduction incentivizes building owners and designers for designing energy-efficient building systems, including lighting, HVAC, and building envelope components. Since government entities do not pay taxes, this deduction is not available to the Owner. Current tax code allows for this deduction to be allocated to the Architect by the Owner on eligible projects to help incentivize energy-efficient building design.

§ 3.6.2 The Contractor recognizes that the Architect is the only entity eligible to pursue such allocations in accordance with 26 U.S. Code §179D, which reads in part, "The allocation of the deduction [is] to the person primarily responsible for designing the property in lieu of the owner of such property." The Contractor further acknowledges the Architect as the primary designer of the project for the purposes of 179D and agrees not to pursue the deduction or to request any portion thereof from the Architect or Owner.

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§ 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.

§ 3.7.1.1 Unless otherwise provided in the Contract Documents, the Contractor is responsible for obtaining utilities for the Project and providing the Work relating to Project utilities as indicated. Responsibility for payment of fees associated with providing utilities to the Project shall be as follows:

.1 Any fees assessed by entities for providing permanent utilities to the Project shall be paid directly to the utility entities by Owner. These include "tap fees" and "electrical connection and service fee." Contractor shall coordinate the permanent utilities and the entity's related work to comply with the construction schedule.

.2 Any fees assessed by entities for providing temporary utilities to the Project for use by Contractor during construction of the Project shall be paid by the Contractor. The Contractor's payment of fees for temporary utilities shall be included in the Base Bid and Contract Sum and will not be reimbursed by the Owner.

§ 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~~ review 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~~ determine that an equitable adjustment should 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,

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.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. The Contractor shall identify the date for Owner's selection on the critical path of the Contractor's Construction Schedule and provide the Owner a minimum of two weeks notice before this date.

§ 3.9 Superintendent and Project Manager

§ 3.9.1 The Contractor shall employ a competent superintendent and project manager and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent and project manager shall represent the Contractor, and communications given to the superintendent or project manager 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.~~ superintendent and project manager. Within 14 days of receipt of the information, the ~~Architect~~ Owner may notify the Contractor, stating whether the Owner ~~or the Architect~~ (1) has reasonable objection to the proposed superintendent or project manager or (2) requires additional time for review. Failure of the ~~Architect~~ Owner 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 or project manager to whom the Owner ~~or Architect~~ has made reasonable and timely objection. The Contractor shall not change the superintendent or project manager without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 The Superintendent employed by the Contractor shall have a minimum of five (5) years commercial experience as the primary Superintendent on projects of similar size and complexity as the Work. The superintendent shall speak fluent English and clearly understand the English language. The Contractor shall submit to the Owner a resume and other supporting documentation showing that the proposed Superintendent is competent and has the minimum work experience required to execute the Work. The Owner reserves the right to request additional supporting documentation regarding the proposed Superintendent's qualifications and to require the Contractor to propose an alternate Superintendent who better meets the requirements contained in this Article, as may reasonably be determined by the Owner. The Contractor shall notify the Architect and Owner in writing of any proposed replacement of the Superintendent. The Contractor shall not replace a competent Superintendent without prior written approval from the Owner. The requirements contained in this Article shall apply to any proposed replacement Superintendent, regardless if the proposed tenure is to be temporary or permanent.

§ 3.9.5 The Contractor shall employ a Project Manager to be assigned to the Work. The Project Manager employed by the Contractor shall have a minimum of five (5) years commercial experience as Project Manager on projects of similar size and complexity as the Work. The project manager shall speak fluent English and clearly understand the English language. The Contractor shall submit to the Owner a resume and other supporting documentation showing that the proposed Project Manager is competent and has the minimum work experience required to execute the Work. The Owner reserves the right to request additional supporting documentation regarding the proposed Project Manager's qualifications and to require the Contractor to propose an alternate Project Manager who better meets the requirements contained in this Article, as may reasonably be determined by the Owner. The Contractor shall notify the Architect and Owner in writing of any proposed replacement of the Project Manager. The Contractor shall not replace a competent Project Manager without prior written approval from the Owner. The requirements contained in this Article shall apply to any proposed replacement Project Manager, regardless if the proposed tenure is to be temporary or permanent. The Project Manager shall not act as the Superintendent or replacement for the Superintendent without written approval from the Owner.

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§ 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~~ Unless otherwise required by the Contract Documents; the schedule shall contain details 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 Substantial Completion date and final completion date indicated in 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~~ in accordance with section 3.12. Unless otherwise required by the Contract Documents, 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~~ accepted 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,~~ 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~~ accepted by the Architect or, in the absence of an ~~approved~~ accepted 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

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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~~ accepted by the Architect.

§ 3.12.8 The Work shall be in accordance with ~~approved~~ accepted 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~~ acceptance 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~~ acceptance to the specific deviation in accordance with 3.12.9 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~~ acceptance thereof.

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

§ 3.12.10 The Contractor shall not be required (delegated design) 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 such delegated 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~~ provide 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, licensed in the state where the Project is located, 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~~ provided 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.

§ 3.12.11 The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittals. The Architect's review of additional resubmittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional resubmittals.

§ 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.

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§ 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. Such terms as 'Architect-Engineer,' 'Engineer,' and 'A-E,' if used in these Contract Documents, is

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intended to mean the Architect and its consultants unless otherwise intended by the context or usage of such terms. Such terms do not mean or include any design professional of the Contractor, Subcontractor, or Owner.

§ 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.

§ 4.1.3 Subject to the standard of care for applying professional judgment to information used or relied upon, Architect and its Consultants may use and rely upon design elements, technical standards, test results, and all other information ordinarily or customarily furnished or published by others, including, but not limited to, specialty contractors, manufacturers, fabricators, and suppliers.

§ 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~~ general compliance 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.

§ 4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

§ 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~~ endeavor to 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) known 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.

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§ 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 general 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.~~ Contractor. 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~~ acceptance of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's ~~approval~~ acceptance of a specific item shall not indicate ~~approval~~ acceptance 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~~ review and make determinations 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.

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§ 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~~ submit to the Owner and Architect ~~of~~ the persons or entities proposed for each principal portion of the ~~Work,~~ Work (list of proposed subcontractors), including those who are to furnish materials or equipment fabricated to a special ~~design.~~ design no later than two days prior to the date of the Pre-construction Conference. Include Contractor's License number and Class for each proposed Subcontractor. Within 14 days of receipt of the information, the ~~Architect~~ Owner 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~~ Owner 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 complete 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~~ shall similarly make available copies of the complete Contract Documents 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.

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§ 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 Owner and 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 Owner and 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.

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§ 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.~~responsible between the Owner, Separate Contractors, and Contractor.

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** **7.1.1.1** 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~~**7.1.1.2** A Construction Change

~~**§ 7.3.1**~~ Directive shall be used in the absence of total agreement on the terms of a Change Order. 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**~~ **7.1.1.2.1** 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.~~7.2.

§ 7.1.1.2.2 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.

§ 7.1.1.2.3 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.

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§ 7.1.1.2.4 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 opinion, 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.

§ 7.1.2 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.

§ ~~7.3.4~~ 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.

7.1.4 If a change in the Work results in an adjustment to the Contract Sum, the adjustment (increase or decrease) shall be based on the following, unless noted otherwise:

- **.1** Material quantities and unit prices (separated into trades; include sales tax).
- **.2** Labor costs (raw cost).
- **.3** Labor burden, applied to labor only, including but not limited to, worker's compensation and public liability, social security tax, old age and unemployment insurance, union welfare fund and fringe benefits. Contractor shall be required to substantiate the labor burden percentage applied to any change in contract amount. Labor burden percentage shall not exceed 30% in any case.
- **.4** Construction equipment cost.
- **.5** Overhead and profit combined (on Claims for net increase only), as defined in Section 7.3.11.
- **.6** Cost of Premiums for Bonds (for Contractor only). Evidence of additional premium for bond shall be submitted with Claim.
- **.7** Extended Overhead Costs (if applicable) which shall be established by pro-rating the value of supervision, temporary facility, and General Conditions and all other direct and indirect costs of Contractor included in the Contract Sum over the number of days included in the Contract Time.

§ 7.2.1 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,~~ forth, a reasonable amount. In such case, and also under Section ~~7.3.3.3,~~ 7.1.1.2.1.3, 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:~~ data which shall include, at the Architect's sole discretion, a cost breakdown itemized in accordance with the current appropriate Data Book and edition of R. S. Means Company, Inc., or other source of construction industry cost data acceptable to the Architect.

- **.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;~~Overhead shall include, but not be limited to, project management, field office personnel including supervision, superintendence, wages of timekeepers, watchmen and clerks, small tools, incidentals, general office expenses, insurance premiums, and all other expenses not included in "costs."
- **.2** ~~Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;~~If the net value of the change results in a credit, the credit given shall be the net cost without overhead or profit (for Contractor, Subcontractor, or
  - **.3** ~~Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;~~Sub-subcontractor). The cost as used herein shall include all items of labor, materials, equipment,
  - **.4** ~~Costs of~~ premiums ~~for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and~~ and bonds.
  - **.5** ~~Costs of supervision and field office personnel directly attributable to the change.~~

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§ ~~7.3.5~~ 7.2.2 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~~ 7.2.3 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~~ 7.2.4 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.

7.3. In Sections 7.2 and 7.2.1, the amount for overhead and profit combined, included in the total cost to the Owner, shall be based on the following schedule:

- **.1** for the Contractor, for Work performed by the Contractor's own forces, 15 percent of the cost.
- **.2** for the Contractor, for Work performed by the Contractor's Subcontractors, 5 percent of the amount due the Subcontractors.
- **.3** for each Subcontractor involved, for Work performed by that Subcontractor's own forces, 15 percent of the cost.
- **.4** for each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractor, 5 percent of the amount due the Sub-subcontractor.
- **.5** cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.2.
- **.6** In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs in the manner prescribed above. Where major cost items are changes to Subcontracts, they shall be itemized also. In no case will a change involving over $500.00 be approved without such itemization.

§ 7.4 Minor Changes in the Work

~~The~~ In the Architect's opinion, 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.

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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.~~determine and the Owner approves.

§ 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.

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§ 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,~~ 7.1.1.2.4, 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.

§ 9.3.1.3 Until final completion, the Owner will pay 95% of the amount due the Contractor on account of progress payments.

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

§ 9.3.2.1 Contractor shall provide invoices, package slips, or other form of supporting data for materials stored on-site claimed on the progress payment, unless it can be verified through on-site observations. Maintain concise bill of materials and label materials stored on-site for ready identification and verification.

§ 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, unless otherwise agreed upon, within seven working 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~~ general conformance 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 general 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~~ is not 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

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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.

§ 9.6.1.1 The Owner may withhold payments to the Contractor notwithstanding the Architect's certification if it is necessary, in the Owner's opinion, to do so to protect the Owner from loss due to any of the reasons set forth in Sections 9.5.1.1 through 9.5.1.7.

9.6.2 Payment of Subcontractors

§ 9.6.2.1 The Contractor shall pay each Subcontractor, no later than seven working 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.

9.6.2.2 Within seven (7) working days after receipt of amounts paid to the Contractor by the Owner for Work performed under this Agreement, the Contractor shall do one of the following:

- **a.** Pay each Subcontractor for the proportional share of the total payment received from the Owner attributable to the Work performed by the respective Subcontractor under This Agreement; or
- **b.** Notify the Owner and Architect, and Subcontractor, in writing, of the Contractor's intention to withhold all

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or part of the Subcontractor's payment with the reason for nonpayment.

9.6.2.3 The Contractor shall pay interest to each Subcontractor on all amounts owed by the Contractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from the Owner for Work performed by the affected Subcontractor under this Agreement, except for amounts withheld as allowed in Section 9.6.8.1. Unless otherwise provided under the terms of this Agreement, for purposes solely of these prompt payment provisions, interest shall accrue at the rate of one percent (1%) per month.

9.6.2.4 In each Subcontract, the Contractor shall include a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier Subcontractor (Sub-Subcontractor).

9.6.2.5 The Contractor's obligation to pay interest to a Subcontractor pursuant to the prompt payment provisions is not an obligation of the Owner, and no modification shall be made to this Agreement and no cost reimbursements claim shall be made for the purpose of providing reimbursement by Owner for such interest charge.

§ 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~~ If, unless otherwise agreed upon, the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven working days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven working 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 working 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.

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§ 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 fully occupy or utilize the Work ~~for its intended use.~~or designated portion thereof, for its intended use with all of the Work's parts and systems operable as required by the Contract Documents. Only incidental cleaning, if required beyond cleaning needed for the Owner's full occupancy or utilization, may remain for final completion.

§ 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.~~ corrected. 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~~ Architect 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.

9.8.3.1 The Architect will provide no more than one (1) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner shall deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

§ 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~~ review 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.

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§ 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~~ general compliance 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.

9.10.1.1 The Architect will provide no more than one (1) inspections to determine whether the Work or a designated portion thereof has attained final completion in accordance with the Contract Documents. The Owner shall deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

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

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

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

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

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

9.11 LIQUIDATED DAMAGES

9.11.1 The Contractor, and the Contractor's surety shall be liable for and shall pay the Owner the sums stipulated on the Bid Form, if any, as liquidated damages for each calendar day of delay after the date established for Substantial Completion in the Contract Documents until the Work is substantially complete.

9.11.2 The Owner has established this amount as the proper measure of liquidated damages which the Owner will

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sustain per day by the failure of the Contractor to substantially complete the Work at the stipulated time and it is not to be construed in any sense as a penalty.

9.11.3 In addition to Liquidated Damages, the Contractor shall pay to the Owner the cost of extended architectural and engineering (including Architect's on-site representative(s), if any, on-site) services rendered beginning at 61 days from the date of Substantial Completion required by the Contract, as adjusted if applicable, and continuously until final completion is achieved.

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.~~Owner.

§ 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.

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§ 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~~ may 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~~ has 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

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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~~ working 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~~ **§ 11.2.2 Property Insurance.** The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum as well as subsequent Contract modifications thereto for the entire Work at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

~~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** Property insurance shall be on an "all-risk" or equivalent policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, collapse, earthquake, flood, windstorm, false work, testing and startup, temporary buildings, and debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's services and expenses required as a result of such insured loss. Coverage for other perils shall not be required unless otherwise provided in the Contract Documents.

~~**§ 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~~

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~~cancellation or expiration. Unless the lapse in coverage arises from an act or omission~~ **11.2.4** If the property insurance requires minimum deductibles and such deductibles are identified in the Contract Documents, the Contractor shall pay costs not covered because of such deductibles.

~~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~~ **§ 11.2.5** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

~~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~~ **§ 11.2.6** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of 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

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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~~ review 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~~ review 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.~~expense without change to the contract time.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or Owner 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.~~expense without change to the contract time.

§ 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.

12.2.2.4 If required by the Owner and the Architect and, upon request by the Owner and prior to the expiration of one year from the date of Substantial Completion, the Architect will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance and the Work.

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§ 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.~~located.

§ 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.~~

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§ 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.~~expense without change to contract time.

§ 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~~ submitted 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~~ in a timely manner 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 working 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 working days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

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§ 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;~~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~~ determination 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~~ determined 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.

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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.~~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~~ Sum, Contract Time, or both 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,~~ 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. Time extensions from adverse weather conditions shall not entitle the Contractor to "extended overhead" recovery.

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§ 15.1.6.2.1 Weather data utilized to support claims for adverse weather conditions shall be that obtained from the National Oceanic and Atmospheric Administration (NOAA) for the nearest weather station to the Project. Adverse weather conditions are defined as measurable precipitation (MP) of 0.1 " or more, or 1.0" or more of snow or ice pellets, or freezing temperature (FT) for a day (24 hours) when the temperature remains at 32 degrees Fahrenheit or below. Only measurable precipitation (MP) or freezing temperature (FT) shall be permitted to be claimed for any one calendar day. Time extensions for adverse weather conditions shall be cumulative over the duration of the Project time and claims shall not be permitted for days for drying out of rain-soaked soil, snow accumulation, or similar weather-related conditions or resulting Project conditions.

.1 The Contractor agrees that it shall not be entitled to a time extension for normal inclement weather (weather conditions other than "adverse weather conditions") which could have been expected at the Project locale due to precipitation or temperature, based upon actual data from the National Oceanic and Atmospheric Administration (NOAA) for the locality closest to the Project for a five-year period preceding the date of the Contract. The Contractor acknowledges and warrants that in making its proposal or bid and Construction Schedule for the Work, it gave due care and consideration to this expected number of calendar days of inclement weather for the locale of the Project and allowed for the impact of normal inclement weather on subsequent Work. During the time of performance, should the expected number of calendar days of normal inclement weather for the locale of the Project be less than originally anticipated by the Contractor and the Owner, at the time of contracting, those days not so affected by normal inclement weather shall be considered float time in the Construction Schedule.

.2 The Contractor agrees that the measure of adverse weather conditions due to MP or FT during the period covered by this Contract shall be the number of days where adverse weather conditions comply with the weather data referenced in subparagraph 15.1.6.2.1.

.3 Extensions of time will be made only for days in which abnormal adverse weather criteria cited in subparagraph 15.1.6.2.1 occur.

.4 If the total calendar days lost due to adverse weather conditions, from the start of the Work at the Project by the Contractor until the principal portions of the Work are enclosed, exceeds the total number of days to be expected to be lost for the same time period, a time extension, if granted, shall only be for the number of calendar days needed to equal the excess number of calendar days lost to such adverse weather conditions.

§ 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 working days after the Claim has been referred to the Initial Decision Maker, subject to Section 15.2.6 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~~ The Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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§ 15.2.2 The Initial Decision Maker will review Claims and within ten working 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 working 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.~~Either party may, within 30 working days from the date of receipt of an initial decision, or if no decision has been rendered in accordance with Section 15.2.1, 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 working 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 working days from the date of filing, unless stayed for a longer period by agreement of

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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.~~order..

§ 15.3.3 Either party may, within 30 working days from the date that mediation has been concluded without resolution of the dispute or 60 working 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 working days after written 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.~~

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I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with this certification 14:13:47 ET on 11/11/2025 under Order No. 4104248195 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ - 2017, General Conditions of the Contract for Construction, other than changes shown in the attached final document by underscoring added text and striking over deleted text.

_____

(Signed)

_____

(Title)

_____

(Dated)

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**SUPPLEMENTARY GENERAL CONDITIONS
OF THE CONTRACT FOR CONSTRUCTION**

This document supplements, modifies, changes, deletes from or adds to the "General Conditions of the Contract for Construction," AIA Document A201, 2017. Where any Article, Section, Subsection or Clause of the General Conditions is not modified or deleted by these Supplementary General Conditions, the unaltered provisions of that Article, Section, Subsection or Clause shall remain in effect.

ARTICLE 1: GENERAL PROVISIONS

DELETE THE LAST SENTENCE OF § 1.1.1 AND REPLACE WITH THE FOLLOWING:

§ 1.1.1 The Contract Documents shall include the bidding documents including, but not limited to, the Invitation for Bids, and the Bid Form.

ADD NEW SECTION 1.1.2.1 AFTER § 1.1.2:

§ 1.1.2.1 General Provisions: Nothing in any resulting Contract shall be construed as authority for either party to make commitments which will bind the other party beyond the scope of service contained herein. The Contract and the obligations of the Owner are contingent upon sufficient funding of the Project, and the Owner shall be bound under the Contract only to the extent that there are funds available to perform its obligations under the Contract.

MODIFY § 1.1.3 AS FOLLOWS:

ADD THE FOLLOWING TO THE END OF THE FIRST SENTENCE:

§ 1.1.3 including any subcontractor's and sub-subcontractor's work and material suppliers or any other entity for which the Contractor is responsible and whether on or off the site of the Project.

ADD THE FOLLOWING SECTIONS AFTER § 1.2.3.

§ 1.2.4 Equipment and materials specified herein shall be furnished complete with all features normally provided with such items, although all features of design and construction may not be specified in complete detail. Such features shall be subject to the approval of Architect and shall include all standard accessories and appurtenances normally provided or which are required for safe operation.

§ 1.2.5 Where references are made throughout the specifications to standards or specifications of trade associations, standards and testing organizations, or to the directions, recommendations or specifications of manufacturers, in all cases the latest approved printed copies of these items shall apply, and all Work shall be done in accordance therewith.

§ 1.2.6 Modifications or exceptions to standards shall be considered as amendments, and unmodified portions shall remain in full effect.

ARTICLE 2: OWNER

DELETE § 2.1.2 IN ITS ENTIRETY.

DELETE § 2.2.1 IN ITS ENTIRETY.

MODIFY THE END OF THE FINAL SENTENCE OF § 2.2.2 AS FOLLOWS.

§ 2.2.2 Delete ", plus interest as provided in the Contract Documents".

DELETE § 2.2.3 IN ITS ENTIRETY.

MODIFY § 2.3.3 AS FOLLOWS:

§ 2.3.3 Delete the words "to whom the Contractor has no reasonable objection and".

ADD THE FOLLOWING TO THE END OF § 2.3.5:

§ 2.3.5 Failure of the Owner to notify the Contractor of necessary corrections or to stop Work shall not relieve the Contractor of any responsibilities or obligations of the Contract Documents.

ADD A NEW SECTION FOLLOWING § 2.4:

§ 2.4.1 In case of failure to deliver goods or services in accordance with the Contract terms and conditions, Owner, after due written notice, may procure them from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which Owner may have.

ADD A NEW SECTION FOLLOWING § 2.5:

§ 2.6 ADDITIONAL RIGHTS

The rights stated in Article 2 shall be in addition to and not in limitation of any other rights of the Owner granted in the Contract Documents or at law or in equity.

ARTICLE 3: CONTRACTOR

DELETE .4 of § 3.1.4 AND REPLACE WITH:

.4 Use of Child Labor Prohibited. Pursuant to Virginia Code § 2.2-4311.4, Contractor agrees that it will not use forced or indentured child labor in the performance of the contract.

DELETE .5 OF § 3.1.4, REPLACE WITH THE FOLLOWING:

.5 Drug-Free Workplace. During the performance of this Contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; and (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace. "Drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with the Virginia Public Procurement Act, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

AFTER § 3.1.4, ADD THE FOLLOWING SECTION:

§ 3.1.5 Contractor hereby represents it is organized as a stock or non-stock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability

partnership and is authorized to transact business in the jurisdiction where the Project is located as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law. The Contractor shall maintain a valid certificate of authority or registration to transact business in Virginia with the Virginia State Corporation Commission as required by Title 13.1 or Title 50 of the Code of Virginia, during the term of the Contract or any Contract renewal. The Contractor shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth to be revoked or cancelled at any time during the terms of the contract. If the Contractor fails to remain in compliance with the provisions of this section, the contract may be voided by the County.

MODIFY § 3.5.1 AS FOLLOWS:

§ 3.5.1 Add the word "proximately" between the word "defect" and the word "caused" in line six.

ADD THE FOLLOWING NEW SECTIONS AFTER § 3.5.2:

§ 3.5.3 Except as otherwise specified for a longer period in the Contract Documents, all Work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for one year from the date of Substantial Completion of the Work. The guarantee shall not apply to Work which has been abused or not maintained by the Owner or its successors in interest as instructed by the Contractor or as otherwise provided in § 3.5.1. At the end of the 11th month from the commencement of the warranty period, the Owner shall schedule a walk-through inspection with the Contractor and Architect to identify any warranty items to be corrected under such warranty period. Nothing in this section shall relieve the Contractor from correcting defective work that did not comply with the Contract Documents. If any work is determined to be defective, the Contractor will be responsible to correct the work whenever the defect is discovered.

§ 3.5.4 The guarantee period for any system or systems on which required tests have not been successfully performed as of the Date of substantial completion for the Work, due to seasonal or other limitations, shall begin after the required tests have been successfully performed.

§ 3.5.5 See technical specifications for any additional warranty requirements which are incorporated here by reference.

§ 3.5.7 The Contractor shall deliver to the Owner any bonds, guarantees or warranties issued by the manufacturers on items of equipment furnished under this Contract. Where guarantees or warranties are written in any division of Specifications for a period of more than two years, such longer terms shall apply.

§ 3.5.8 The Contractor shall reasonably respond to all warranty work within five (5) days of notification, or the Owner shall have the work repaired by others and backcharged to the Contractor. The Contractor shall adequately respond to emergency situations within 24 hours, immediately upon notification and supply results of the findings with remedy to the Owner in a timely manner.

DELETE § 3.7.1 AND REPLACE WITH THE FOLLOWING:

§ 3.7.1 The Contractor shall secure and pay for all applicable permits, governmental fees and licenses necessary for the proper execution and completion of the Work, including but not limited to, erosion control bonds and land disturbance permits.

ADD THE FOLLOWING NEW SECTIONS AFTER § 3.10:

§ 3.10.4 The Work shall be executed at such a rate as will assure meeting the specified Substantial Completion date(s) within the time/dates provided in the specifications. By execution of the Contract, the Contractor represents it has analyzed the Work, the materials and methods involved,

the systems of building, availability of qualified labor, restrictions of the site, constraints imposed, workload and capacity to perform the Work, and agrees that the specified times are reasonable considering the existing conditions prevailing in the locality of the Work, including weather conditions, and other factors, with reasonable allowance for variations from average or ideal conditions.

§ 3.10.5 The Substantial Completion date(s) provided are considered essential to the satisfactory performance of this Contract and to the coordination of all Work on the Project. The Owner reserves the right to require the Contractor to prosecute the Work in accordance with the Contractor's Construction Schedule and satisfactorily complete the Work by the Substantial Completion date. The Contractor is responsible to provide the operations, manpower, resources, materials, and all items and work necessary to complete the Work and meet the Substantial Completion and Final Completion dates provided. The Contractor understands and agrees that: the Substantial Completion, Final Completion, actual start and completion dates, rate of progress, and coordination are essential conditions of this Project. It is understood and agreed that TIME IS OF THE ESSENCE and the Contractor agrees to diligently follow and adhere to the Schedule with due diligence so as to execute the Work within the Substantial Completion and Final Completion dates and time frames stipulated in the Contract Documents. The Contractor shall, at no additional cost to the Owner, take all necessary steps, including overtime, double shifts, weekends, and holiday work to complete this Work and meet the Substantial Completion and Final Completion dates stipulated in the Contract Documents in the event of any delays that are not excusable or otherwise the responsibility of the Owner.

§ 3.10.6 Should any of the following conditions exist for delays that are not excusable or otherwise the responsibility of the Owner, the Contractor shall, at no extra cost to the Owner, prepare a Short Term Recovery Schedule to describe in detail how he will regain compliance with the originally approved Contractor's construction schedule:

a. If the Work is ten days behind the approved Schedule.

b. If the Contractor proposes a change in the approved Schedule.

Until such Recovery Schedule is approved, the Architect may decline to certify payment in accordance with Article 9.5.1 of the General Conditions.

SUPPLEMENT § 3.13 BY ADDING THE FOLLOWING:

§ 3.13.1 Unless otherwise indicated on the drawings or as directed by the Owner, the property lines shall be the limits of construction and all Work shall be confined therein, including the storage of materials and equipment at the site.

INSERT THE FOLLOWING AT THE END OF THE SECOND SENTENCE OF § 3.14.1:

§ 3.14.1 Only appropriate, qualified Subcontractors and skilled tradesmen shall do the Work.

ADD THE FOLLOWING TO § 3.14:

§ 3.14.3 No alteration of structural members shall be done without the prior approval of the Architect of the specific nature, size and location of such alteration. Approval to alter structural members shall not be construed to affect the Contractor's responsibility for the adequacy of the strength of such members providing such alteration be performed in accordance with the Architect's approval.

MODIFY § 3.15.1 AS FOLLOWS:

§ 3.15.1 Add the word "all" between the words "remove" and "waste."

MODIFY § 3.15.2 AS FOLLOWS:

§ 3.15.2 delete "Owner shall be entitled to reimbursement from the Contractor" and add "the cost thereof shall be charged to the Contractor and may be deducted from funds paid to the Contractor, or the Contractor shall pay the amount due within ten (10) days of the date of any statement of amounts due."

MODIFY § 3.16 AS FOLLOWS:

§ 3.16 Add "reasonable" in line one between "with" and "access.

Add "(both as to time and to location)" between "access" and "to".

Following the period, add the following: The Contractor shall not unreasonably withhold access.

MODIFY THE THIRD SENTENCE OF § 3.17 AS FOLLOWS:

§ 3.17 "If the Contractor has reason to believe that any required design, process or product is an infringement of a patent, the Contractor shall not be responsible for any such loss if such information is promptly furnished to the Architect and the Owner in writing."

MODIFY § 3.18.1 AS FOLLOWS:

§ 3.18.1 In the first line, add a comma and the word "defend" after the word "indemnify."

In the fifth line, delete "(other than the Work itself), but only to the extent. . ."

In the sixth line, add the words "materialman, supplier,. . ." after the word "Subcontractor," and before the word "anyone."

In the seventh line, insert "as contemplated by subparagraph § 3.3.2. . ." after the word "liable"

Add the following sentence at the end of the paragraph "The requirements of this Paragraph shall be incorporated into the Contractor's insurance policies in a manner approved by the Owner."

ADD A NEW § 3.19:

§ 3.19 CONTRACTOR'S REPRESENTATIONS

§ 3.19.1. By entering into this Contract with the Owner, the Contractor represents and warrants the following, together with all other representations and warranties in the Contract Documents:

.1 That it is experienced in and competent to perform the type of work required and to furnish the plant, materials, supplies or equipment to be so performed or furnished by it;

.2 That it is financially solvent, able to pay its debts as they mature, and possessed of sufficient working capital to initiate and complete the Work required under the Contract;

.3 That it is familiar with all federal, state, county, municipal and department laws, ordinances, permits, regulations and resolutions which may in any way affect the Work or those employed therein, including but not limited to any special laws or regulations relating to the Work or any part thereof;

.4 That such temporary and permanent Work required by the Contract Documents which is to be done by it will be satisfactorily constructed and fit as provided in the Contract Documents;

.5 That it will fully comply with all requirements of the Contract Documents;

.6 That it will perform the Work consistent with good workmanship, sound business practice, and in the most expeditious manner consistent with the Contract Documents;

.7 That it will furnish efficient business administration and experienced superintendence and an adequate supply of workmen, equipment, tools and materials at all times;

.8 That it has carefully reviewed the Work required and that the Work can be planned and executed in a normal and orderly sequence of work and reasonably scheduled so as to ensure completion of the Project in accordance with the Contract Documents, allowing for normal and reasonably foreseeable weather;

.9 That it will complete the Work within the Contract Time and all portions thereof within any required Contract deadlines unless delayed by excusable events or acts of the Owner;

.10 That its Contract price is based upon the labor, materials, systems and equipment required by the Contract Documents; and

.11 That it shall comply, and shall cause all subcontractors to comply, with all applicable federal, state, and local statutes, laws, rules, ordinances, orders, directives, permits and regulations, whether now existing or hereafter promulgated, of all governmental agencies, whether federal, state, or local and whether legislative judicial or executive (collectively "Applicable Laws" or "applicable laws") relating to Contract Documents and the performance of the Work, including but not limited to all Commonwealth of Virginia Employment Discrimination and Equal Opportunity laws and regulations and Commonwealth of Virginia Procurement and Hiring laws and regulations.

ARTICLE 4: ARCHITECT

MODIFY THE SECOND LINE OF § 4.1.2 AS FOLLOWS:

§ 4.1.2 Delete ", Contractor,".

MODIFY THE THIRD LINE OF § 4.2.2 AS FOLLOWS:

§ 4.2.2 Delete "in a manner indicating that the Work, when fully completed, will be"

MODIFY § 4.2.12 AS FOLLOWS:

§ 4.2.12 Delete ", will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith"

ARTICLE 5: SUBCONTRACTORS

ADD THE FOLLOWING TO THE END OF § 5.2.1:

§ 5.2.1 The Contractor understands and agrees that it alone is responsible to the Owner for all of the Work under this Contract and that any review of Subcontractors or suppliers will not in any way make the Owner responsible to, or for, the actions or failures of any Subcontractor or supplier. The Contractor and any of its Subcontractors or suppliers shall not contract with any proposed Subcontractor or supplier against which reasonable objection has been made under the provisions of this paragraph.

DELETE THE END OF THE LAST SENTENCE OF § 5.2.3 AND REPLACE WITH THE FOLLOWING:

§ 5.2.3 Delete all text in the last sentence that follows "unless,". In place of deleted text, insert the following "(i) it is initiated as a result of the Owner's or Architect's objections, (ii) the Contractor has acted promptly and responsively in submitting names as required and (iii) the Contractor relied on a quotation from such person or entity to whom the Owner or Architect has objected in preparing its response to the Owner's Invitation to Bid and in establishing the Contract Sum and the Contract Time. Also, no increase in the Contract Sum shall be allowed unless the Owner has approved the increased contract amount of the subcontract with the replacement Subcontractor prior to the Contractor's contracting with the replacement Subcontractor."

ADD THE FOLLOWING SUBPARAGRAPHS AFTER § 5.3:

§ 5.3.1 The Contractor will not be released from any part of his liabilities or obligations under its Contract should any Subcontractor fail to perform in a satisfactory manner the work undertaken by it.

§ 5.3.2 Nothing contained in the Contract shall be construed as creating any contractual relationship between any Subcontractor and Owner. The sections of the specifications do not control the Contractor in dividing the work among Subcontractors or limit the work performed by any trade.

§ 5.3.3 The Contractor shall be responsible to the Owner for acts and omissions of his own employees, and of Subcontractors and their employees. He shall also be responsible for the coordination of the work of the trades, Subcontractor's and suppliers.

§ 5.3.4 The Architect will not undertake to settle any differences between or among the Contractor and his Subcontractors or suppliers.

§ 5.3.5 The Contractor shall, without additional expense to the Owner, employ specialty Subcontractors where required by the specifications. "Specialty Subcontractors," when specified as a requirement, means a Subcontractor regularly engaged in the manufacture or installation of the contract items. The specialty Subcontractor shall select and combine the materials involved and maintain and have available for the purpose workmen skilled in the specified work. The specialty Subcontractor shall be the manufacturer, be licensed by the manufacturer as an installer, or work under direct supervision of the manufacturer.

MODIFY THE LAST SENTENCE OF § 5.4.1 AS FOLLOWS:

§ 5.4.1. After "under the subcontract" add ", provided, however, that the Owner shall not be liable for any breach or default of the Contractor under such subcontract agreement, and the Contractor shall remain solely liable for any such breach or default".

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

ADD THE FOLLOWING SUBPARAGRAPH AFTER § 6.1:

§ 6.1.5 The Owner shall have the right to deliver and move furniture and equipment into the building prior to completion of the Work by the Contractor if this furniture and equipment does not seriously

interfere with the Contractor's operations. Questions of what constitutes interference shall be referred to the Architect.

ARTICLE 7: CHANGES IN THE WORK

ADD THE FOLLOWING TO § 7.2:

§ 7.2.2. CONTRACT COST PROPOSAL: Unless otherwise required, the Contractor shall, within ten (10) days following receipt of such written authorization, submit in writing to the Architect a proposal for accomplishing such change, addition or extra work. The proposal shall set forth any increase or decrease in cost to the Owner known by Contractor as of the date of submission. The proposal shall state the basis of compensation for all work in connection with any such change, addition or extra work. Adequate supporting documentation is required to accompany the proposal. All Change Order proposed pricing shall be valid for a minimum of thirty (30) days.

§ 7.2.3 Contractor's quotation for changes in the Work shall be valid by for not less than thirty (30) days from the date of receipt of quotation by Owner and Architect.

MODIFY § 7.3.1 AS FOLLOWS:

§ 7.3.1 Add, "and may adjust" after "other revisions," and delete "being adjusted" in the second sentence.

MODIFY § 7.3.7 AS FOLLOWS:

§ 7.3.7 In line three, substitute "the Owner shall initiate the" for "shall be recorded as a".

ADD NEW SECTION, § 7.3.11, FOLLOWING § 7.3.10:

§ 7.3.11 In Subparagraphs 7.2.2 and 7.3.4 the following conditions shall apply:

.1 Overhead shall include, but not be limited to, supervision, superintendence, wages of timekeepers, watchmen and clerks, small tools, incidentals, general office expenses, insurance premiums, and all other expenses not included in "costs."

.2 If the net value of the change results in a credit, the credit given shall be the net cost without overhead or profit (for Contractor, Subcontractor, or Subsubcontractor). The cost as used herein shall include all items of labor, materials, equipment, premiums and bonds.

.3 If the Contract price is adjusted in accordance with this Section, the maximum adjustment for overhead and profit (regardless of the extent of the adjustment to the Contract Time, if any) shall be as follows:

a. For the Contractor, for any work performed by its own forces, 15% of actual field cost;

b. For each Subcontractor involved, for any work performed by its own forces, 15% of the actual field cost;

c. For each Sub-subcontractor involved, for any work performed by its own forces, 15% of the actual field cost;

d. For the Contractor, for work performed by each Subcontractor, 7.5% of the sum of Subcontractor's actual field cost plus Sub-subcontractor costs plus the Subcontractor's allowance for overhead and profit as defined above.

e. "Cost of machinery and equipment" shall be charged separately for "actual field cost," shall not be subject to markup for overhead or profit, and shall be based on actual rentals, unless the machinery or equipment is owned by the Contractor. Machinery and equipment owned by the Contractor shall be charged according to Blue Book rates Equipment supplied by separate divisions of the contractor's organization shall be considered rental equipment.

f. The allowance for "overhead and profit" to be paid the Contractor shall cover and compensate him for his profit, overhead, general superintendence and field office expense, general and administrative home office expense, and all other elements of cost and expense not embraced within the "actual field cost" or "cost of machinery and equipment" as herein defined.

ARTICLE 8: TIME

ADD NEW SECTION, § 8.1.2.1, AFTER § 8.1.2.

§ 8.1.2.1 The Contractor must commence Work under this Contract within the number of days after date of receipt by it of Notice to Proceed as specified in the Notice to Proceed or as otherwise agreed to by the Parties in a writing signed by an authorized representative from each Party. The Contractor shall execute said Work diligently, and to complete the entire Work ready for use as specifically set forth in the Contract.

SUPPLEMENT § 8.1.3 BY ADDING THE FOLLOWING:

§ 8.1.3 As to all acts or failures to act occurring prior to the relevant Date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events as of such Date of Substantial Completion; as to all acts of failures to act occurring subsequent to the relevant Date of Substantial Completion, any applicable statute of limitations shall be deemed to have accrued in any and all events as of the date of issuance of the final Certificate for Payment.

MODIFY § 8.2.1 AS FOLLOWS:

§ 8.2.1 In line 2 after "Work", add ", and the Contractor is capable of properly completing the work within the Contract Time."

MODIFY § 8.3.1 AS FOLLOWS:

§ 8.3.1 In line 4, delete "(4) by delay authorized by the owner pending mediation and binding dispute resolution; . . ."

In line five, replace "(5)" with "(4)".

Add the following at the end of the subparagraph: "Notwithstanding any other provisions to the contrary, any delay solely occasioned by the Contractor, Subcontractors, or Sub-subcontractors or the employees or agents of same, shall not warrant an extension of the Contract time."

MODIFY SUBPARAGRAPH § 8.3.2 AS FOLLOWS:

§ 8.3.2 Delete the words “Article 15” and substitute, “this Contract”.

ARTICLE 9: PAYMENT AND COMPLETION

MODIFY § 9.1.2 AS FOLLOWS:

§ 9.1.2 In line three delete “shall” and add “may, by written agreement signed by both the Owner and the Contractor,”

MODIFY § 9.2 AS FOLLOWS:

§ 9.2 In the fourth line add “or the Owner” after “Architect” and before “shall be used.”

MODIFY § 9.3.3 AS FOLLOWS:

§ 9.3.3 On the third and fourth lines, delete “, to the best of the Contractor’s knowledge, information and belief,”

At the end of subparagraph § 9.3.3 add the following. “Notwithstanding any other language to the contrary contained in the Contract Documents, title to work completed passes by incorporation of the Work in the construction or by payment, whichever occurs first.”

MODIFY § 9.4.2 AS FOLLOWS:

§ 9.4.2 Delete “and” in the fourth line between “Contract Documents” and “that the Contractor is entitled.” In the place of “and,” insert a comma.

At the end of the first sentence, add “and that sufficient funds remain unpaid from the Contract Sum to complete the Work for which the Contractor or its Subcontractors have responsibility under the Contract Documents.”

In line seven, add “in writing” between “expressed” and “by.”

MODIFY § 9.5.1 AS FOLLOWS:

§ 9.5.1 Delete the first sentence of § 9.5.1 and replace it with: “The Architect shall not certify payment and shall withhold a Certificate for Payment in whole or in part to the extent reasonably necessary to protect the Owner.”

ADD THE FOLLOWING SECTION AFTER § 9.6.2.5:

§ 9.6.2.6 The Contractor shall be liable for the entire amount owed to a subcontractor and to pay such subcontractor within 60 days of the receipt of an invoice following satisfactory completion of the work for which the subcontractor has invoiced, even if Contractor has not received payment from Owner for Work performed by the Subcontractor. The Contractor shall not be liable for amounts otherwise reducible due to the subcontractor’s noncompliance with the terms of the contract. However, in the event that the contractor withholds all or a part of the amount invoiced by the subcontractor under the terms of the contract, the contractor shall notify the subcontractor within 50 days of the receipt of such invoice, in writing, of his intention to withhold all or a part of the subcontractor’s payment with the reason for nonpayment, specifically identifying the contractual noncompliance, the dollar amount being withheld, and the lower-tier subcontractor responsible for the contractual noncompliance. Payment by the party contracting with the contractor shall not be a

condition precedent to payment to any lower-tier subcontractor, regardless of that contractor's receiving payment for amounts owed to that contractor.

DELETE § 9.6.7 IN ITS ENTIRETY AND SUBSTITUTE THE FOLLOWING:

§ 9.6.7 Payment otherwise due hereunder to the Contractor or any Subcontractor shall be withheld until the Contractor has furnished its federal employer identification number to the Owner and the Subcontractors have furnished their federal employer identification numbers to the Contractor and the Contractor has furnished the same to the Owner.

AFTER § 9.7, ADD THE FOLLOWING SECTION:

§ 9.7.1 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective Work, the Owner shall have a right to offset such amount against the Contract Sum, subject to the disputes provisions of this Agreement, and may elect either to (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (ii) issue written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.7.2 Interest: Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate of one percent (1%).

ADD THE FOLLOWING AT THE END OF § 9.8.4:

§ 9.8.4 Nothing herein shall authorize the Architect to extend the date for Final Completion of the Work except as authorized in Article 7.

SUPPLEMENT § 9.8.5 BY ADDING THE FOLLOWING:

§ 9.8.5.1 Final payment will follow the semi-final inspection, but only when all of the following have been accomplished:

(a) Action on all Change Orders and claims concluded.

(b) As-Built information furnished to the Architect.

(c) Charts, wiring diagrams, keys, operating manuals, shop drawings, catalog cuts, brochures furnished to the Architect and accepted for transmittal to Owner’s representative.

(d) Necessary bonds, guarantees, warranties, and certificates furnished.

(e) Owner personnel instruction in operation of all equipment and systems completed.

(f) General Contractor’s account settled with the Owner.

(g) Final Change Order issued and Contractor’s final release executed conditioned on final payment.

§ 9.8.5.2 When the Architect is satisfied that all of the above has been accomplished, the Contractor shall submit an itemized final application for payment.

§ 9.8.5.3 The Architect shall issue, if he determines the need, additional instructions, or procedures for affecting the orderly processing of this final inspection and payment phase.

MODIFY § 9.10.4 AS FOLLOWS:

§ 9.10.4 .3 Delete the word "or"

.4 Add "; or" at the end of the clause

.5 Claims arising from facts or circumstances unknown to the Owner at the time final payment is made, such as (by way of example and not in limitation) premature failure of any of the Work as a result of defective materials or labor supplied by, or through, the Contractor.

ADD THE FOLLOWING SUBPARAGRAPHS TO § 9.10:

§ 9.10.6 Neither approval of any progress or final payment nor the issuance of a certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by Owner, nor any act of acceptance by Owner, nor any failure to do so, nor the failure of Owner to file a Claim as set forth in the Contract Documents, nor any correction of defective Work by Owner, shall constitute an acceptance of Work not in accordance with the Contract Documents nor shall the same relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his surety from any obligation under the Contract, the performance bond or the payment bond.

§ 9.10.7 If, upon receipt of the written notice from the Contractor that any portion of the work is substantially complete, the Architect determines that the Contractor has not conscientiously complied with the above, then the inspection by the Owner and the Architect may be delayed until the Architect determines that the Contractor has complied with the above requirements.

§ 9.10.8 Upon substantial completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Architect, the Owner shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof, as provided in the Contract Documents. The Contractor's Application shall be accompanied by the Final Punch List which shall be revised as of the date of the Application to indicate all work which remains incomplete. This revised Final Punch List shall have an accurate dollar value assigned to each item of work. If any items on the Final Punch List are omitted from the revised Final Punch List accompanying the Application, and the Owner or the Architect are not assured that these omitted items have been satisfactorily completed, they shall add such items to the list accompanying the Application and assign dollar values to each item to cover the cost of the work involved. The Architect and Owner shall also adjust the dollar values assigned by the Contractor if, in their reasonable opinion, the Contractor's assignment is insufficient to cover the cost of the work. The total of all final dollar value assignments will be deducted from the Contractor's Application prior to payment by the Owner. After the issuance of Substantial Completion, no payment will become due until all required as-built drawings, maintenance manuals, bonds, guarantees, warranties, certificates, final inspections, fire marshal inspection, mechanical inspection, etc., and the like have been submitted and accepted by the Owner. No subsequent payment will be made until the Final Payment, unless authorized by the Owner. If, in the opinion of the Owner and Architect, the Contractor is diligently pursuing the remaining Work as itemized on the revised Final Punch List, and the Contractor is also correcting with dispatch, defects occurring after the preparation of the Final Punch List, then the Owner may, at its option, authorize payment prior to Final Payment.

§ 9.10.9 At project completion and prior to final payments, the Owner shall be supplied with one (1) full set of marked-up "As-Built Drawings" by the Contractor and all items listed in the "Project Closeout Checklist."

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

SUPPLEMENT § 10.2.3 BY ADDING THE FOLLOWING SENTENCES:

§ 10.2.3 The Contractor shall at all times make all reasonable efforts to protect the Work in progress from damage caused by rain water, ground water, and all other water. He shall provide enclosures, and other equipment required to provide this protection. The Contractor shall provide all shoring, bracing, and sheathing required for safety and proper execution of the Work and shall have the same removed when Work is complete. All shoring, bracing, and sheathing shall be constructed in accordance with accepted engineering procedures and shall meet the requirements of all applicable federal, state and local regulations.

ADD THE FOLLOWING TO § 10.2.4:

§ 10.2.4.1 When the use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary, the Contractor shall give the Owner and Architect reasonable advance notice.

ADD THE FOLLOWING AFTER § 10.2.7:

§ 10.2.7.1 All public ways within or adjacent to the work site shall be maintained by the Contractor in such condition that they may be used freely and safely by the public.

§ 10.2.7.2 If new or existing structures, facilities, utilities, streets, pavements, curbs, walks, or other site improvements are damaged or incorrectly removed through the execution of the Work, they shall be repaired, replaced, or made good by the Contractor to the satisfaction of the Owner, the Architect, utility, or authority of the damaged or removed Work

MODIFY § 10.3.6 AS FOLLOWS.

§ 10.3.6 Add the following "or any subcontractor, sub-subcontractor, material supplier or any other entity for which the Contractor is responsible" between "If, without negligence on the part of the Contractor" and "the Contractor is held liable …."

As modified, § 10.3.6 shall read as follows:

"If, without negligence on the part of the Contractor or any subcontractor, sub-subcontractor, material supplier or any other entity for which the Contractor is responsible, 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."

ARTICLE 11: INSURANCE AND BONDS

DELETE § 11.1.2 AND REPLACE WITH THE FOLLOWING:

§ 11.1.2 Bonds shall be in the form of AIA Document A312-1984 which includes both a Performance Bond and a Payment Bond. The Performance and Payment Bonds shall each be in an amount at least equal to the Contract Sum as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents. The bonds shall remain in full force during the Contract term and the Performance Bond shall remain in effect at least until one year after the date when final

payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents.

ADD THE FOLLOWING NEW SUBSECTION, § 11.1.5, TO § 11.1:

§ 11.1.5 Performance and Payment Bonds shall be delivered simultaneously with delivery of the executed Contract.

REPLACE § 11.5.2 WITH THE FOLLOWING:

§ 11.5.2 Prior to settlement of an insured loss, the Insured Party (whether it is the Owner or the Contractor) shall notify the other Party of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The other party shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the other Party does not object, the Insured Party shall settle the loss and the other Party shall be bound by the settlement and allocation. Upon receipt, the Insured Party shall make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Parties shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Party not directly negotiating the settlement timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Insured Party 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

ADD THE FOLLOWING AT THE END OF § 12.1.2:

§ 12.1.2 This provision shall also apply to surveys and tests as well as examinations of completed Work. In any case, costs shall include the cost of professional advice and services necessary to complete examinations, surveys and tests.

ARTICLE 13: MISCELLANEOUS PROVISIONS

DELETE § 13.1 AND REPLACE WITH THE FOLLOWING

§ 13.1 The Contract shall be governed by the laws of the Commonwealth of Virginia, without giving effect to any choice or conflict of law provision or rule (whether of the Commonwealth of Virginia or of another state) that would cause the application of the laws of any jurisdiction other than those of the Commonwealth of Virginia. The parties submit to and agree to not contest the personal jurisdiction and venue of the circuit and general district court of Mecklenburg County, Virginia, for resolution of any and all claims, causes of action, or disputes arising out of or related to this Contract.

SUPPLEMENT § 13.4 BY ADDING THE FOLLOWING:

§ 13.4.7 Notices given to the Architect as required in paragraph § 13.4.1 and § 13.4.2 shall be given at least three (3) days in advance of the date of such tests and shall be confirmed to the Architect in writing.

§ 13.4.8 Owner's Right to Operate Equipment: When the required test of a system or systems has not been successfully completed at the time the Work under the Contract has otherwise been finally

completed, the Contractor shall operate these services when required until the tests have been successfully completed or it shall have given the Owner the right to operate them.

§ 13.4.9 The Architect/Engineer and Owner shall be present at all demonstrations of all equipment and systems; i.e., HVAC, fire alarms, etc. The Owner and Architect/Engineer shall be contacted one (1) week prior to these demonstrations

ADD NEW SECTIONS FOLLOWING § 13.5:

§ 13.6 Waiver

§ 13.6.1 Any failure of the Owner to demand rigid adherence to one or more of this Contract's provisions, on one or more occasions, shall not be construed as a waiver nor deprive the Owner of the right to insist upon strict compliance with the terms of this Contract. Any waiver of a term of this Contract, in whole or in part, must be in writing and signed by the party granting the waiver to be effective.

§ 13.7 Severability

§ 13.7.1 If any provision of this Contract is held to be illegal, invalid, or unenforceable, or is found to be against public policy for any reasons, such provision shall be fully severable and this Contract shall be construed and enforced as if such illegal, invalid, or unenforceable provision had never been part of this Contract, and the remaining provisions of this Contract shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision, or by its severance from this Contract.

§ 13.8 Lead Solder Certification

§ 13.8.1 At the completion of the work, the Contractor must submit a written certification that no plumbing or mechanical materials or equipment incorporated into the project contains lead solder.

§ 13.9 Federal Immigration Reform and Control Act of 1986

§ 13.9.1 The Contractor does not, and shall not during the performance of this Contract, knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

§ 13.10 Ethics in Public Contracting.

§ 13.10.1 The provisions, requirements, and prohibitions pertaining to bidders, offerors, contractors, and subcontractors that are found in Article 6 (Va. Code § 2.2-4367 *et seq.*) of the Virginia Public Procurement Act apply to this Contract.

§ 13.11 Audit

§ 13.11.1 Contractor's records shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by the Owner to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by Contractor or any of its payees pursuant to execution of the Contract. Such records subject to examination shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this Contract.

.1 For the purpose of such audits, inspections, examinations and evaluations, the Owner shall have access to said records from the effective date of this Contract, for the duration of the Work, and until five (5) years after the date of final payment by Owner to Contractor pursuant to this Contract.

.2 Owner shall have access to Contractor's facilities, shall have access to all necessary records, and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with this article. Owner shall give Contractor reasonable advance notice of intended audits.

.3 Contractor shall require all Subcontractors, insurance agents, and materials suppliers (payees) to comply with the provision of this article, by insertion of the requirements hereof in a written contract between Contractor and payee. Failure to obtain such written contracts which include such

provisions shall be reason to exclude some or all of the related payees' costs from the amount payable to Contractor pursuant to this Contract.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

MODIFY § 14.1.1 AS FOLLOWS:

§ 14.1.1.1 Add "or" following the semi-colon.

§ 14.1.1.2 Substitute a period for the semi-colon.

DELETE § 14.1.1.3 AND § 14.1.1.4 IN THEIR ENTIRETY

DELETE § 14.1.2, § 14.1.3, AND § 14.1.4 IN THEIR ENTIRETY

DELETE § 14.2.1 AND SUBSTITUTE THE FOLLOWING:

§ 14.2.1 The Owner may terminate the Contract if the Contractor:

.1 institutes proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Code or any similar or applicable federal or state law; or if a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days from the date of said filing; or if the Contractor admits in writing, his inability to pay his debts generally as they become due, or if it makes a general assignment for the benefit of his creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of his bankruptcy or insolvency; or if a receiver of all or any substantial portion of the Contractor's properties is appointed;

.2 abandons the Work; or if he fails, except in cases for which an extension of time is provided, to prosecute promptly and diligently the Work or to supply enough properly skilled workmen or proper materials for the Work;

.3 submits an Application for Payment, sworn statement, affidavit or document of any nature whatsoever which is intentionally falsified;

.4 fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches its obligations under any subcontract with a Subcontractor; or if a materialman's lien or notice of lien is filed against any party of the Work or the site of the Project and not promptly bonded or insured over by the Contractor in a manner satisfactory to the Owner;

.5 disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project;

.6 otherwise violates any provision of the Contract Documents; then the Owner, upon the occurrence of the events described in clauses .1 through .5 above, without prejudice to any right or remedy available to the Owner under the Contract Documents or at law or in equity may, after giving the Contractor and his surety under the Performance Bond and under the Labor and Material Payment Bond, if any, seven (7) days' written notice, terminate the employment of the Contractor and, in accordance with the Uniform Commercial Code, may enforce a Security Agreement by taking possession of and using all or any part of the Contractor's materials, equipment, supplies and other property of every kind used by the Contractor in the performance of the Work in the completion of the Work. If requested by the Owner, the Contractor shall remove any part or all of its equipment, machinery and supplies from the site of the Project within seven (7) days from the date of such

request, and in the event of the Contractor's failure to do so, the Owner shall have the right to remove or store such equipment, machinery and supplies at the Contractor's expense. In case of such termination, the Contractor shall not be entitled to receive any further payment for Work performed pursuant to the Contract through the date of termination. The Owner's right to terminate the Contract pursuant to this Subparagraph § 14.2.1 shall be in addition to and not in limitation of any rights or remedies existing hereunder or pursuant hereto or at law or in equity.

MODIFY § 14.2.2 AS FOLLOWS:

§ 14.2.2 In the first sentence, delete "and upon certification by the Architect that sufficient cause exists to justify such action,"

DELETE § 14.2.4 IN ITS ENTIRETY AND SUBSTITUTE THE FOLLOWING:

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds all costs to the Owner of completing the Work, then the Contractor shall be paid for all Work performed by the Contractor to the date of termination. If such costs to the Owner of completing the Work exceed such unpaid balance, the Contractor shall pay the difference to the Owner upon the Owner's demand. The costs to the Owner of completing the Work shall include, but not be limited to, the cost of any additional architectural, managerial and administrative services required thereby, any costs incurred in retaining another contractor or other subcontractors, any additional interest or fees which the Owner must pay by reason of a delay in completion of the Work, attorneys' fees and expenses and any other damage, costs and expenses the Owner may incur by reason of completing the Work. The amount, if any, to be paid to the Contractor shall be determined by the Architect upon application, in the manner provided in Paragraph 9.4, and this obligation for payment shall survive the termination of the Contract.

DELETE § 14.3.2 IN ITS ENTIRETY:

DELETE § 14.4.1 AND SUBSTITUTE THE FOLLOWING:

§ 14.4.1 Upon written notice to the Contractor and the Architect, the Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Contract for its convenience. In such case, the Contractor shall be paid for all Work satisfactorily executed and any expense sustained in performing the Work prior to the effective date of termination, plus reasonable out of pocket termination expenses.

DELETE § 14.4.3 IN ITS ENTIRETY.

ARTICLE 15: CLAIMS AND DISPUTES

MODIFY SUBPARAGRAPH § 15.1.2 AS FOLLOWS:

§ 15.1.2 Delete the words ", 10 years after the date of Substantial Completion of the Work." And replace with "such time period during which the Owner is permitted by law to bring an action on a construction contract."

ADD THE FOLLOWING TO SUBPARAGRAPH § 15.1.4:

§ 15.1.4.1 The Contractor shall continue to prosecute the Work and adhere to the approved Construction Schedule during all disputes or disagreements, except as provided in 14.1 above. No Work shall be delayed or postponed pending resolution of any disputes or disagreements.

DELETE SUBPARAGRAPH § 15.2.1 AND SUBSTITUTE THE FOLLOWING:

§ 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 § 12.2.2 or arising under Sections §§ 10.3, 10.4, and 11.5, shall be referred to the Architect as Initial Decision Maker, unless otherwise indicated in the Contract. Except for those claims excluded by this Section § 15.2.1, a final decision by the Owner shall be required as a condition precedent to litigation of all Claims between the Contractor and Owner or as otherwise provided by Virginia law. 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.

ADD THE FOLLOWING TO SUBPARAGRAPH § 15.2.2:

§ 15.2.2 Any claim by the Contractor for extension of time shall be evaluated only if the Contractor presents to the Architect and the Owner notice of such claim within twenty one (21) days of the occurrence of the events on which the Contractor makes such claim. The Contractor's failure to present such notice within the stated time period shall be deemed a waiver of any such claim for extension of time based on those events.

ADD THE FOLLOWING TO § 15.2.4:

§ 15.2.4 If there is a surety and there appears to be a possibility of a Contractor's default, the Initial Decision Maker may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

MODIFY § 15.2.5 AS FOLLOWS:

§ 15.2.5 Delete last sentence and substitute the following "The initial decision shall be final but subject to litigation."

DELETE § 15.2.6 AND § 15.2.6.1 IN THEIR ENTIRETY:

DELETE § 15.2.8 IN ITS ENTIRETY:

DELETE § 15.3.1 IN ITS ENTIRETY AND REPLACE IT WITH THE FOLLOWING LANGUAGE:

§ 15.3.1 The parties may agree in writing to handle 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 15.1.6 through non-binding mediation in advance of pursuing legal remedies as outlined in Section 15.4.

DELETE § 15.3.2 IN ITS ENTIRETY AND REPLACE IT WITH THE FOLLOWING LANGAUGE:

§ 15.3.2 If the parties endeavor to resolve their Claims by mediation, they shall select a mediator mutually acceptable to both parties.

DELETE § 15.3.3 IN ITS ENTIRETY

DELETE § 15.4 IN ITS ENTIRETY AND REPLACE IT WITH THE FOLLOWING LANGUAGE:

§ 15.4 ARBITRATION AND LITIGATION
To the extent not already removed by the changes in these Supplementary Conditions, delete all other references to arbitration throughout the A201-2017 Document.

SECTION 011000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Town Hall Renovations.

B. Owner's Name: Town of South Hill - South Hill, Virginia.

C. Architect's Name: Moseley Architects of Richmond, VA.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price (Fixed Sum) as described in the Bidding and Contractual Requirements (Division 00) included in this Project Manual.

1.03 PROFESSIONAL SEALS

A. Use of Professional Seals on Bidding, Procurement, and Contract Documents: For the purposes of this paragraph, the term “Regulant” refers to the individual who signs and seals parts of the Contract Documents (e.g. the Drawings and Specifications). Certain information has been excerpted verbatim from a source or sources (e.g., UL assemblies, SMACNA details, applicable state/jurisdiction building code) which was considered or used by Regulant in preparing parts of the Contract Documents, as follows:

1. The excerpted information was neither prepared under the direct control nor personal supervision nor created by the Regulant, as it was prepared by the source and owner of the excerpted information.
2. For purposes of bidding, procuring, and performance of the Work, and in any event of conflicts or ambiguities between the excerpted information in the Contract Documents and the requirements of applicable codes and standards, provide the better quality or greater quantity of Work which, at a minimum, complies with the requirements of the applicable codes and standards.
3. Advise Architect immediately upon becoming aware of requirements of the Work which are not consistent with the requirements of the excerpted information.
4. Attribution is acknowledged for information obtained and included herein verbatim from other source or sources.
5. Regulant has taken into consideration and used certain excerpted information from other sources which are applicable to the Contract Documents, and the Regulant indicates by its seal that it is assuming responsibility for its services in use and application of the excerpted information to the requirements of Work, but not for the excerpted information itself which was prepared by others. Regulant does not indicate by its seal that it is responsible for use or application of other information in such source or sources which was not included herein.

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. Maintain routes of egress and life safety systems for Owner and occupants at all times.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.
   1. Locate and conduct construction activities in ways that will limit disturbance to site.

B. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage without approval from Owner and Architect.

D. Existing building shall be maintained weathertight. Do not modify elements of the existing building except as indicated on the Construction Documents. Repair damage to the existing building due to construction activity.

E. Time Restrictions:
   1. Comply with local regulations for hours of work, noise ordinances, and similar requirements.

F. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
   3. Prevent accidental disruption of utility services to other facilities.

G. Controlled Substances: The use of alcohol and drugs is not permitted on the Project site. Provide a designated outdoor smoking area for construction personnel that is at least 30 feet away from the building.

1.06 SPECIFICATION SECTIONS APPLICABLE TO ALL WORK

A. The provisions of the Owner/Contractor agreement, General Conditions of the Contract, Supplementary Conditions (if any), and all Division 01 sections shall apply to all sections of the Project Manual.

1.07 SECURITY PROVISIONS

A. Background Check: The Owner requires that a background check be performed on all personnel working on the site. Comply with Owner's requirements for screening service to be used. Maintain a list of all accredited persons, submit a copy to Owner on request.

B. Identification Badges: Provide identification badges to each person authorized to enter premises. Badge shall include personal photograph, name, employer, expiration date, and an assigned number. Have personnel return badges to Contractor after completion of their portion of the Work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 011000

SECTION 012000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, unless otherwise agreed to by Owner in writing.

B. Forms filled out by hand will not be accepted.

C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.

D. Include in each line item, the amount of Allowances specified in this section. For Quantity Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

E. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.

F. Revise schedule to list approved Change Orders, with each Application For Payment.
   1. When a Change Order includes multiple PCOs, break down the total Change Order to include each PCO as an individual line item.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

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

B. Use Form AIA G702 and Form AIA G703.

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. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Balance to Finish.
   9. Retainage.

F. Execute certification by signature of authorized officer.

G. 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.

H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
   1. When a Change Order includes multiple PCOs, break down the total Change Order to include each PCO as an individual line item.

I. Submit one electronic and three hard-copies of each Application for Payment.

J. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 013000.
   2. Construction progress schedule, revised and current as specified in Section 013000.
   3. Partial release of liens from major subcontractors and vendors.
   4. Affidavits attesting to off-site stored products.

1.03 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.

B. For changes for which advance pricing is desired, Architect will issue a 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 14 days, unless otherwise indicated in Proposal Request.

C. 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.

D. For other required changes, Architect will issue a Construction Change Directive, 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.

E. 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 based on the fixed unit prices.

F. 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.

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

H. 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.

I. 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.

1.04 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 017000.

C. Provide evidence and supporting data for the following, as attachments to the Application for Final Payment:
   1. AIA G706, "Contractor's Affidavit of Payment of Debts and Claims."
   2. AIA G706A, "Contractor's Affidavit of Release of Liens."
   3. AIA G707, "Consent of Surety to Final Payment."
   4. Copy of Certificate of Occupancy.
   5. Settlement of all debts and claims, including liquidated damages, taxes, and fees.
   6. Utility meter readings, fuel levels, and similar measurements, as of the date of turn over to the Owner.
   7. Certificates for insured products, and certificate of insurance for completed operations.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012000

SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.01 SUBMITTALS

A. Allowance Proposal: Submit initial proposal for purchase of products and materials, on Change Order form.

B. Supporting Documentation:

1. Products and Material: Provide invoices and other documents as required, for products and materials indicating quantities, prices, taxes, delivery fees, and other costs.
2. Labor and Installation: Provide time sheets and other documents as required, indicating all on-site Subcontractor costs, including hours worked, quantity or amount of product/material installed, hourly wages, and Subcontractor overhead and profit.

1.02 LUMP-SUM AND QUANTITY ALLOWANCES

A. Costs Included in Lump-Sum and Quantity Allowances: All Subcontractor's costs: Cost of products and materials, taxes, freight, delivery, receiving and handling, labor and installation, Subcontractor overhead and profit.

B. Costs Not Included in Lump-Sum and Quantity Allowances: All General Contractor's costs: General coordination, GC's overhead and profit.

C. Contractor Responsibilities:

1. Assist Architect in selection of products.
2. Obtain proposals from suppliers and installers and offer recommendations.
3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

D. Contractor shall return unused products and materials that were purchased under allowance to the manufacturer or supplier, and provide credit to the Owner.

E. At closeout of contract, differences in costs for each allowance will be adjusted by Change Order to increase the contract sum or to provide a credit to the Owner, as applicable.

1.03 LUMP SUM ALLOWANCE SCHEDULE

A. Lump Sum Allowance No. 1: Include the stipulated sum of $3,000 for interior panel signage, as specified in Division 10 Section "Signage."

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012100

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 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 unavailability, regulatory changes, or unobtainable warranty terms.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.

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

C. Substitutions shall be submitted directly by a General Contractor/prime bidder. Substitutions submitted by a subcontractor, manufacturer, supplier or other entity other than General Contractor are not acceptable and shall be rejected.

D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. A copy of the Substitution Request Form that shall be used is included at the end of this Section for informational purposes. Request a Word or editable PDF version of the form from the Architect and complete the form digitally; do not complete the form by hand.
   2. Contractor's Substitution Request documentation must include the following:
      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) Description of how proposed substitution affects other parts of work.

b. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
1) Physical characteristics.
2) In-service performance.
3) Expected durability.
4) Visual effect.
5) Sustainable design features.
6) Warranties.
7) Other salient features and requirements.
8) Include, as appropriate or requested, the following types of documentation:
(a) Product Data:
(b) Samples.
(c) Certificates, test, reports or similar qualification data.
(d) Drawings, when required to show impact on adjacent construction elements.

c. Impact of Substitution: Provide data indicating cost savings to Owner and change in Contract Time due to accepting substitution.

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

3.02 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions for convenience only within 30 days after date of Agreement.
1. Substitutions for convenience submitted after this time period may or may not be considered, at the Architect's discretion.

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

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

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

3.03 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.

3.04 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.

3.05 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

END OF SECTION 012500

Moseley

Substitution Request Form – Prior to Receipt of Bids

General Information				
Project Name	Town Hall Renovations			
A/E Project Number	651455			
Specified Product/Item Information				
Specification Title				
Section				
Page				
Article / Paragraph				
Description				
Proposed Substitution Information				
Proposed Substitution				
Reason for not providing specified product/item				
Comparative Data	Attach a point-by-point comparative data list. Include all differences between the proposed substitution and the specified product/item. If not provided, this Request will be rejected.			
Manufacturer				
Manufacturer Address				
Manufacturer Phone				
Manufacturer Representative Email address				
Trade / Model Name				
Model Number				
Installer (if known)				
Installer Address				
Installer Phone				
History	☐ New product	☐ 2-5 years	☐ 5-10 yrs	☐ 10 yrs or longer
Proposed substitution affects other parts of the Work	☐ Yes		☐ No	
If yes, explain				
Proposed Substitution Similar Installation				
Have you used this product/item on any other projects	☐ Yes		☐ No	
Project				
Project Address				
Architect/Engineer				
A/E Phone				

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Owner	
Owner Phone	
Date installed	

Attached Supporting Data

☐ Drawings	☐ Product Data/Specs	☐ Samples	☐ Tests	☐ Reports	☐

Entity submitting this Substitution Request certifies all of the following:

- Proposed substitution has been fully investigated and determined to be equivalent or superior in all respects to the specified product, except as may otherwise be specifically and clearly indicated herein.
- If applicable, proposed substitution shall not adversely affect LEED requirements nor shall it prevent achieving the relative number of applicable LEED point[s] the specified product would have received.
- Proposed substitution's function, appearance, and quality are equal or superior in all respects to the specified product, except as may otherwise be specifically and clearly indicated herein.
- Same or superior warranty and/or guarantees shall be furnished for proposed substitution as is required for the specified product/item.
- Same maintenance service and source replacement parts, as applicable, are available; including local availability.
- Proposed substitution shall have no adverse effect on other trades.
- Proposed substitution shall not affect dimensions and functional clearances.
- Coordination, installation, and changes to the Work as necessary for the accepted proposed substitution shall be complete in all respects.

Entity's Information

Submitted by	
Signed By	
Date	
Email address of Signee above	
Company Name	
Address	
Phone	

Architect / Engineer Review and Action

If this Substitution request is acceptable, it shall be included in an Addendum. If the proposed substitution is not included in an Addendum, then the proposed substitution was rejected; was not submitted in accordance with the Bidding/Procurement Documents; and/or this Form was not complete. This Form shall be completely filled in to be considered for acceptance.

Acceptance of this Substitution request is an acceptance of the manufacturer and product/item only for general conformance with the design concept reflected in the Bidding/Procurement Documents. The A/E has made no attempt to verify specific performance data, or to check details of the proposed substitution as to special features, capacities, physical dimensions, or code and/or regulatory compliance – all of which remain the responsibility of the submitting entity and the Contractor (if not the submitting entity).

END OF SUBSTITUTION REQUEST FORM

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Electronic File Distribution: Upon request, Contractor may be provided electronic files for use in coordination of the Work and preparation of submittals. Contractor shall submit a signed Request Form for Electronic Files, provided by the Architect.

1. Electronic files do not contain all of the information of the Bid Documents or Contract Documents for construction of the Project, and the Architect shall not be responsible for differences between electronic files, Bid Documents, and Contract Documents.

1.02 SUBMITTALS

A. General Contractor Personnel: Within 15 days after award of Contract, provide a summary of General Contractor's on site personnel. Identify each individual, beginning with project superintendent. List project responsibilities, cell phone number, and email address.

B. Subcontractors: Within 15 days after award of Contract, provide a summary of all companies and individuals engaged as subcontractors for any part of the Project. Include a contact name, company address, phone number, and email address, and identify what part of the Work shall be completed by each subcontractor.

C. Coordination Drawings: Submit completed Coordination Drawings for Architect's information.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.

1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
2. It is Contractor's responsibility to submit documents in allowable format.
3. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
4. Paper document transmittals will not be reviewed unless previously approved; emailed electronic documents will not be reviewed.
5. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: Coordinate method for exchanging files no later than the Preconstruction Meeting. The Architect's Procore service and procedures can be used at no charge. If the Contractor chooses to use a different platform and methodology:
   1. The Architect may reject the methodology or platform proposed and:
      a. use the Architect's Procore service, or
      b. the project team will revert to traditional hard-copy exchange;
   2. or the Contractor shall bear the cost of software, licensing, training, etc., for the project team to participate.

C. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive/record copies of files for Owner. If the Project Team uses an alternate platform preferred by the Contractor, the Contractor shall be responsible for distributing archive/record copies of files to Owner and Architect.

3.02 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.
   4. Owner's Commissioning Agent.
   5. Major subcontractors, consultants, and others as necessary and appropriate.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract and Architect.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.
   8. Site mobilization and utilization.
   9. Other project-specific items on pre-distributed agenda.

D. Architect shall record minutes and distribute digital copies to Owner, Contractor, and other attendees. Contractor shall be responsible for distribution to subcontractors and other personnel affected by decisions made.

3.03 INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN DEVELOPMENT SESSION

A. Architect will schedule a meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Owner's Commissioning Agent.
   3. Architect.
   4. Mechanical engineer.
   5. Contractor.

6. HVAC subcontractor.
7. Other major subcontractors, consultants, and others as necessary and appropriate.

C. Agenda:
1. Protection of Materials: Discussion of how and where materials that could impact IAQ will be stored, including but not limited to, the following:
a. Insulation.
b. Gypsum board.
c. Flooring materials.
d. Ceiling panels.
e. Furnishings.
f. Odorous chemicals.
2. Protection of HVAC: Discussion of how HVAC equipment will be stored installed, and operated during construction.
3. Pathway Interruption: Discussion of how airflow between construction zones will be limited to prevent the spreading of pollutants from one part of the building to another.
4. Housekeeping: Discussion of how the building will be kept clean and dry.
5. Materials Installation Scheduling: Discussion of what wet (odor emitting) materials will be used on the project, in order to schedule their installation before fuzzy (odor absorbing) materials.

3.04 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section. Do not allow installation of affected work to proceed until preinstallation meeting can be held.
1. Include all preinstallation meetings on the Project Schedule.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect and Owner 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 copies to Architect, Owner, participants, and those affected by decisions made.

3.05 PROGRESS MEETINGS

A. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor's superintendent.
4. Other subcontractors or consultants as required for the specific parts of the Work to be discussed.

C. 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 RFIs log and status of responses.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Maintenance of quality and work standards.
11. Effect of proposed changes on progress schedule and coordination.
12. Other business relating to the work.

D. Architect shall record minutes and distribute copies to the Owner, Contractor, and other consultants, Owner's representatives, or other third party attendees. The Contractor shall be responsible for distributing to any affected subcontractors and other personnel.

3.06 CLOSEOUT MEETING

A. Schedule and administer closeout meeting no later than 90 days before the scheduled Date of Substantial Completion.

B. Make arrangements for the meeting, prepare agenda with copies for participants, and preside at the meeting.

C. Attendance Required:
1. Owner.
2. Architect.
3. Contractor's superintendent.
4. Major subcontractors.
5. Other subcontractors or consultants as required.

D. Agenda:
1. Review closeout requirements and procedures in Division 1 Section "Execution and Closeout Requirements."
2. Review startup, testing, and adjusting of all systems, including testing/adjusting/balancing (TAB) and Commissioning.
3. Coordination of inspections by local authorities having jurisdiction and third party Special Inspectors as required to obtain Certificate of Occupancy.
4. Coordination of Owner's occupancy and changeover of utilities, insurance, and building keying/lock system.
5. Procedures for Contractor's Correction Punch List, Architect's Substantial Completion inspection, and Final Correction Punch List.
6. Delivery, turnover, and storage of maintenance materials, attic stock, special tools, and other non-installed materials.
7. Coordination of closeout documentation, including demonstration and training materials and videos, as built/record documents, operation and maintenance binders, and warranty binders.
8. Removal of temporary facilities, construction equipment, and tools.
9. Final cleaning, touchup, restoration, and preventive maintenance.
10. Coordination of final Applications for Payment.

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

3.07 DAILY CONSTRUCTION REPORTS

A. Include only factual information. Do not include personal remarks or opinions regarding operations and/or personnel.

B. Prepare a daily construction report recording the following information concerning events at Project site and project progress:
   1. Date.
   2. High and low temperatures, and general weather conditions.
   3. List of subcontractors at Project site.
   4. Approximate count of personnel at Project site.
   5. Major equipment at Project site.
   6. Material deliveries.
   7. Safety, environmental, or industrial relations incidents.
   8. Meetings and significant decisions.
   9. Unusual events (submit a separate special report).
   10. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Contractor's most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
   11. Directives and requests of Authority(s) Having Jurisdiction (AHJ).
   12. Testing and/or inspections performed.
   13. Signature of Contractor's authorized representative.

3.08 COORDINATION DRAWINGS AND COORDINATION CONFERENCE

A. Coordination Drawings: The Contractor shall prepare coordination drawings of all spaces where utilities, systems, and other components converge or intersect and efficient installation is required to accommodate all components.
   1. Prepare coordination drawings of the following spaces, at minimum. Supplement with additional spaces as required by project-specific conditions.
      a. Above ceilings.
      b. Vertical chases, shafts, and wall cavities.
      c. Mechanical and electrical rooms, fire pump room, and other major utility spaces.
   2. Provide accurate overall dimensions of components (for example, outside diameters of pipe and conduit, or overall ductwork dimensions including insulation and enclosure thickness).
   3. Include accessory components of systems that could cause potential conflicts, such as bracing, slotted channel framing, hangers, and other supports, valve handles, flanges, fittings, cable/wire management trays, and other similar components.
   4. Include sequence of installation of all components, materials, and systems.
   5. Include means of access to each component, material, or system, for maintenance and repairs.
   6. Provide additional coordination drawings as required by individual specification sections.
   7. Prepare Coordination Drawings using project-specific information. Do not use photocopies or reproductions of Contract Documents, and do not use standard details or data from manufacturers, suppliers, or other outside parties.

8. Drawing Files: The Contractor may develop coordination drawings using 2D CAD software or with 3D BIM software with clash-detection functionality.
    a. The Architect will furnish original 3D BIM model or 2D DWG files for Contractor's use upon receipt of Architect's "Request Form for Electronic Files". A copy of this form shall be provided to the Contractor upon request.
        1) The Architect makes no guarantee to the accuracy of components in electronic files. The Contractor shall coordinate electronic data with the Contract Documents in order to provide final Coordination Drawings.
        2) If using 2D files, the Contractor shall prepare drawings in multiple views (for example, RCP and section) to fully represent 3D space, for example plenum heights, wall assembly thicknesses, etc.
9. Submittal: Submit Coordination Drawings as a "Submittal for Information." Architect will not approve Coordination Drawings, but will keep on file for use in subsequent coordination and conflict resolution.

B. Coordination Conference: Schedule and conduct a Coordination Conference prior to beginning construction or rough-in of affected work. Require attendance by all affected trades and installers.
    1. Identify the Coordination Conference as a "milestone" date on the Construction Progress Schedule.
    2. Advise the Architect of all potential conflicts identified in the Coordination Drawings and at the Coordination Conference.
    3. Do not proceed with construction or installation of components, materials, or systems until potential conflicts have been resolved and affected parties have agreed to a remedy.
    4. Remedies to address conflicts not identified in the Coordination Drawings, at the Coordination Conference, or otherwise addressed prior to construction or installation of affected components, materials, and systems, or discovery of a non-workable situation not identified or addressed, will not be considered as a basis for delay, time extension, or additional cost to the Contract.

3.09 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. 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. Prepare using software provided by the Electronic Document Submittal Service.
    4. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is 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 - 016000 - 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.
   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.
      a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

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

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

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

G. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 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.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
   1. When the Architect provides a response to an RFI, that RFI shall be closed. If there is additional information required, or a question about the response itself, then another RFI with a new number shall be generated by the Contractor. At no time shall an RFI be "re-opened" or remain open after the Architect has formally responded.
   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.

3.10 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
   1. Coordinate with Contractor's construction schedule and schedule of values.
   2. Format schedule to allow tracking of status of submittals throughout duration of construction.
   3. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
   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.
      b. Account for a reasonable duration of time to allow for final color selections, approvals, and preparation of final finish schedules (one finish schedule for interior color selections, and one for exterior color selections). This period shall begin upon receipt of all submittals requiring color selection.

3.11 SUBMITTALS FOR REVIEW

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

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

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

D. Color Selection: In individual specification sections, specific items are identified which require color/finish selections to be made by the Architect from color chart or sample submittals. The Submittal Schedule, prepared according to “Submittal Schedule” paragraph above, shall identify these required color/finish submittals.
   1. Submittals requiring color selection must be submitted by Contractor and approved by Architect for conformance with Contract Documents prior to the start of the color selection process. When the submittals have been approved for conformance with Contract Documents, the process for color selection, presentation of color concepts, Owner approval, and Color Schedule preparation will begin.
   2. Interior Color Selections: The Architect will make coordinated selections of colors/finishes for the building interior, present the resulting color concepts to the Owner for approval, and prepare the actual Interior Color Schedule for the Work.
   3. Exterior Color Selections: The Architect will make coordinated selections of colors/finishes for the building exterior and prepare Exterior Color Schedule.

E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below.

3.12 SUBMITTALS FOR INFORMATION

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

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

3.13 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 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

3.14 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: 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. Selection Samples: Submit one set of manufacturer's charts indicating full range of available colors, textures, patterns, and other aesthetic qualities.

C. Verification Samples: Submit three sets of physical samples. Two sets will be retained by Architect, the third will be returned to the Contractor. Maintain approved sample at the Project site for use in comparing to installed Work.

1. Where a full-size assembly of multiple components is required as a sample (for example, railing section or full-size cabinet), only one sample is required for those items.

3.15 SUBMITTAL PROCEDURES

A. General Requirements:

1. Use a single transmittal for all submittals required by each individual specification section, unless otherwise indicated.
    a. Verification samples and large shop drawing submittals may be submitted under separate cover when approved by Architect.
2. Transmit using AIA G810 or other approved form.
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. Upload submittals in electronic form to Electronic Document Submittal Service website.
7. Schedule submittals to expedite the Project, and coordinate submission of related items.
    a. Allow sufficient time for administrative processing, Architect's initial review, and potential resubmittals.
        1) Large submittals may require longer review durations. Large or multi-part submittals (such as structural steel or aluminum storefront and curtainwall) may be submitted by building area, building level, or otherwise subdivided "packages" with the approval of the Architect. Subdivided "packages" will be reviewed one at a time in the order received. If large submittals are submitted in their entirety as a single package, the Architect may elect to review and return portions of the submittal individually, and will coordinate the schedule for return of these partial reviews with the Contractor for sequencing in the Work.
    b. Allow additional time for submittals requiring sequential reviews involving Architect's consultants, Owner, or another affected party.
    c. Allow additional time for submittals requiring sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval.
    d. No extensions to the project schedule shall be granted due to delays that can be attributed to submittal processing or failure to allow for sequential reviews or resubmittals.
8. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
9. When revised for resubmission, identify all changes made since previous submission.
10. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
11. Incomplete submittals may not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.

12. 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.

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. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for 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.
   3. Selection Samples: Provide color charts that accurately relay color, pattern, and texture information. Photographs or photocopies of color charts are unacceptable and subject to rejection.
   4. Verification Samples: Provide physical samples of each color selected by Architect from Selection Samples. Verification samples shall be manufactured and prepared identically to the material that shall be used in the installed Work. Label each sample clearly with manufacturer, product name, and color, texture, and/or pattern name as applicable. Photographs of physical samples are unacceptable and subject to rejection.

3.16 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 actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "Approved as Noted":
         1) Where review notations indicate revisions are necessary, submit corrected item, with review notations acknowledged and incorporated.
   2. Not Authorizing fabrication, delivery, and installation:
      a. "Revise and Resubmit":
         1) Resubmit revised item, with review notations acknowledged and incorporated.
      b. "Rejected/Resubmit":
         1) New submittal required, with item complying with requirements of Contract Documents.
      c. "Color Selection Required":

1) Color selections for the entire project, or portion thereof, will be provided after receipt of all color charts and samples required for the Project.

d. "Not Submitted":

1) Additional submittal items are required that were not provided in the original submittal.

E. Architect's actions on items submitted for information:

1. Items for which no action was taken:

a. "Not Reviewed": To notify the Contractor that the submittal has been received for record only.

END OF SECTION 013000

SECTION 013216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SUBMITTALS

A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

F. Submit in PDF format.

1.02 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

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.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify work of separate phases and other logically grouped activities.

C. Identify all major milestone dates, including, but not limited to, Notice to Proceed and Substantial and Final Completion dates.

D. Identify duration of each activity, in maximum 15 day intervals.

E. Incorporate work restrictions indicated in Section 011000 - Summary, if any.

F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

G. 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.

H. Indicate procurement duration and delivery dates for long-lead time items.

I. Coordinate submittal approval process with procurement and delivery requirements. Submittals requiring resubmission or revision for approval will not be allowed as a basis for schedule impacts.

J. Indicate delivery dates for owner-furnished products and products identified under Allowances.

K. Indicate the time period for color selection activity and approval by Owner and Architect, as required per Section 013000 - Administrative Requirements.

L. Indicate date of changeover from temporary to permanent utilities.

M. Indicate time periods for Commissioning activities, equipment startup, and testing and balancing.

N. Provide a reasonable time period prior to the date of Substantial Completion for administrative activities and procedures.

O. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify critical path activities.

C. Identify the first work day of each week.

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. Schedule revisions shall not modify any Contract Dates or the Contract Sum, unless specifically approved and documented via Change Order.

G. Submit reports required to support recommended changes.

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

I. Recovery Schedule: If the Contractor is 14 or more days behind schedule, in the opinion of the Owner, the Contractor shall prepare a Recovery Schedule, incorporating a reasonable, mutually agreed upon length of time to return the Work to the approved Schedule. The

Recovery Schedule shall be prepared to the same level of detail as the original construction progress schedule. Submit the recovery schedule for Owner review; do not proceed until the Owner has approved.

1. At the end of the recovery period, Owner shall reevaluate construction progress and determine if the Recovery Schedule has been successfully completed. If completed, Owner shall direct the Contractor to proceed with the latest approved Construction Schedule.
    a. If the Contractor is still behind schedule at the end of the recovery period, the Owner shall direct the Contractor to provide additional schedule revisions to complete the recovery, or may at its option pursue other means of resolution as provided for by the Contract Documents.
2. Need for and preparation of a Recovery Plan shall not be the basis of additional cost to the Owner or extension of Project Schedule, unless the Contractor can demonstrate that the reason for being behind schedule is no fault of their own.

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 013216

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

B. Contractor's Professional Design Services/Delegated Design: 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. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor’s sole responsibilities for construction means, methods, techniques, sequences, and procedures.

b. 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.

C. 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.

1.02 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:

1. Temporary sheeting, shoring, or supports.
2. Temporary scaffolding.
3. Temporary bracing.
4. Temporary falsework for support of spanning or arched structures.
5. Temporary foundation underpinning.
6. Temporary stairs or steps required for construction access only.
7. Temporary hoist(s) and rigging.
8. Investigation of soil conditions and design of temporary foundations to support construction equipment.
9. Additional temporary controls as required.

1.03 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.

B. Base design on performance and/or design criteria indicated in individual specification sections.

1. Submit a Request for Information to Architect if the criteria indicated are not sufficient to perform required design services.

C. Scope of Design Services/Delegated Design: As required by individual specification sections.

1.04 SUBMITTALS

A. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
   1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
      a. Full name.
      b. Professional licensure information.
      c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.

B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
   1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
   2. Include required product data and shop drawings.
   3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
   4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.

C. Test Reports: After each test/inspection, require testing agency to promptly distribute digital copy of report to Architect, Owner, Contractor, and others as required.
   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.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor 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:
   1. Submit report promptly to Architect for information.

2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Qualification Statement: Provide documentation showing testing laboratory is accredited under OSHA's Nationally Recognized Testing Laboratory (NRTL) program or through the National Institute of Standards and Technology's (NIST's) National Voluntary Laboratory Accreditation Program (NVLAP).

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

C. Contractor's Quality Control (CQC) Plan:
   1. Prior to start of work, submit a comprehensive plan describing how contract deliverables will be produced. Tailor CQC plan to specific requirements of the project. Include the following information:
      a. Management Structure: Identify personnel responsible for quality. Include a chart showing lines of authority.
         1) Include qualifications (in resume form), duties, responsibilities of each person assigned to CQC function.
      b. Management Approach: Define, describe, and include in the plan specific methodologies used in executing the work.
         1) Management and control of documents and records relating to quality.
         2) Communications.
         3) Coordination procedures.
         4) Resource management.
         5) Process control.
         6) Inspection and testing procedures and scheduling, including inspections by authorities having jurisdiction and special inspections.
         7) Control of noncomplying work.
         8) Tracking deficiencies from identification, through acceptable corrective action, and verification.
         9) Control of testing and measuring equipment.
         10) Project materials certification.
         11) Managerial continuity and flexibility.
      c. Acceptance of the plan is required prior to start of construction activities not including mobilization work. Owner's acceptance of the plan will be conditional and predicated on continuing satisfactory adherence to the plan. Owner reserves the right to require Contractor to make changes to the plan and operations, including removal of personnel, as necessary, to obtain specified quality of work results.

1.06 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, comply with the higher quality or quantity, and provide documentation of the conflict to the Architect.

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.

1.07 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Owner will employ and pay for services of an independent testing agency to perform Special Inspections and other specified testing indicated in individual specification sections.

B. Where indicated in individual specification sections, Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

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

D. Contractor Employed Agency: Testing agency shall comply with requirements of ASTM E 329, and shall be certified through OSHA's Nationally Recognized Testing Laboratory (NRTL) program or through the National Institute of Standards and Technology's (NIST's) National Voluntary Laboratory Accreditation Program (NVLAP).

1. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

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 Mockups: Construct integrated exterior mockups 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. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

E. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

F. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
   1. Architect will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.
   2. Make corrections as necessary until Architect's approval is issued.

G. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

H. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

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

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

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

3.04 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties for Contractor-Employed Testing and Inspection Agencies:
   1. Test samples of mixes submitted by Contractor.
   2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.

6. Perform additional tests and inspections required by Architect.
7. Attend preconstruction meetings and progress meetings.
8. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work 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.
7. Coordinate repairs where testing and inspection has damaged the Work.

E. Re-testing and/or re-inspections required because of non-compliance with specified requirements shall be performed by the same agency. Do not proceed with construction activities that would conceal or cover work needing re-testing or re-inspection.

F. Re-testing and/or re-inspections required because of non-compliance with specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, and field quality control requirements as applicable, and to initiate instructions when necessary.

B. Provide a written report of observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions or Contract Documents. Obtain Owner's approval prior to proceeding with any modifications.

3.06 DEFECT ASSESSMENT

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

B. Contractor may request to restore defective Work or portions of the Work to comply with specified requirements in lieu of replacement. Obtain Owner's approval prior to proceeding with restoration.

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

END OF SECTION 014000

SECTION 014200
DEFINITIONS AND REFERENCE STANDARDS

PART 1 GENERAL

1.01 SUMMARY

A. The definitions include in this section supplement, but do not replace, the definitions contained in the General Conditions. In the event of duplication, the General Conditions shall govern.

B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

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

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

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

D. Provide: To furnish and install.

E. Supply: Same as Furnish.

F. Installer: A Contractor or other entity engaged by Contractor, as an employee, subcontractor, or contractor of lower tier, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that specified requirements apply exclusively to tradespeople of the corresponding generic name.

G. Experienced: When used with the term "Installer," this term means having successfully completed previous work similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with the requirements of local authorities having jurisdiction.

H. Replace: Provide an acceptable like product or material in place of a missing or unacceptable (rejected) product or material. To "replace" an unacceptable product or material includes its removal and disposal.

I. Punch List: A written list of unfinished Work and defective Work resulting from inspection and testing to determine whether Substantial Completion has been accomplished. The unfinished Work and defective Work must be finished and corrected to obtain Substantial or Final Completion, in accordance with the General Conditions.

J. Written or Printed: When used in conjunction with manufacturer's product data or installation requirements, either of these terms may be used to require compliance with manufacturer's current printed and published information.

1.03 REFERENCE STANDARDS

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

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

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

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 014200

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 DEWATERING

A. Provide temporary means and methods for dewatering all temporary facilities and controls, in compliance with local authority having jurisdiction.

B. Maintain temporary facilities in operable condition.

1.02 TEMPORARY UTILITIES

A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. New permanent facilities may be used, with prior Owner authorization.

1. Use of permanent facilities shall not impact specified warranties. Equipment shall be maintained during temporary usage.

C. Temporary Lighting: Provide temporary lighting of type and producing lighting levels necessary for proper installation of the Work.

D. Temporary Heating, Cooling, and Ventilation: Provide temporary measures and equipment as required for curing, drying, and humidity control. Comply with manufacturer's installation instructions for specific product requirements.

1. Provide measures and equipment to meet warranty requirements of interior woodwork specified in Division 6 and/or Division 12 sections.
2. Use of Permanent HVAC Facilities and Equipment: Use of HVAC equipment shall be subject to Owner approval.
    a. Protect new and existing HVAC equipment from intrusion of dust, silica, dirt and debris during construction operations.
    b. Cover all openings in new and existing inactive ductwork during construction operation with minimum 6 mil polyethylene sheet.
    c. Where use of existing HVAC equipment is approved by Owner, provide temporary filters with a minimum MERV of 8. Change the filters every two weeks while construction is ongoing. Provide new filters at Substantial Completion; do not change out temporary filter until approved by Architect.
    d. Do not perform testing and balancing of HVAC equipment until dust, silica, dirt and debris producing activities are complete.

E. Temporary Water: For the duration of construction or until permanent water service is available at the site, the Contractor shall provide a temporary water source, as part of the Contract Price.

F. Temporary Electric Service: Until electric utility provides permanent service at the site, the Contractor shall provide temporary electrical power, as part of the Contract Price.

G. Temporary Sewer and Drainage: Comply with requirements of local authority having jurisdiction for connection of temporary sewer to public system.

1.03 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:

1. Telephone Service: Contractor shall ensure that all of its forces, including on-site managers/supervisors of each Subcontractor, have mobile devices and adequate voice and data coverage for on-site operations.
2. Internet Connections: Contractor shall ensure that all of its forces have access to high speed internet connection with wireless capability; wireless network shall support Internet speed tests in excess of 5 Mbps symmetrical (up/down).
3. Video Conferencing and Video Site Visit/Walkthrough Infrastructure: Maintain personal computer/laptop with large format display screen and video conferencing software in the common-use field office.
    a. Maintain equipment in common-use field office for site visits and walkthroughs, including a portable, high quality digital video camera, audio headset with microphone for walkthrough commentary/narration, and accessories including connection cables and battery packs.

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
    1. Provide temporary unisex toilet units and all required disposable supplies.
    2. Provide handwash stations and hand sanitizer at each toilet unit.
    3. Provide regular servicing of portable facilities by professional servicing company; including draining, cleaning, and disinfecting.

B. New permanent facilities may not be used during construction operations.

C. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

A. 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 from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building, and for emergency egress.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

A. Barrier Mesh Fence: Provide minimum 6-foot height open-mesh polypropylene barrier fabric mounted on lumber or galvanized steel posts to isolate and define construction area and prevent accidental public access.

B. Construction: Commercial grade chain link fence.
    1. Contractor may provide either fixed or portable fencing to suit conditions. For portable fencing, provide concrete or galvanized steel bases for supporting posts. Bases for portable fencing shall not obstruct sidewalks or other pathways used by pedestrians.

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

D. Unless otherwise indicated, provide barrier mesh fencing to enclose the approximate extent of the entire construction site. Chain link fencing shall be used to enclose Contractor's field office and laydown/storage areas, areas of the site actively in construction, and as deemed necessary by Contractor.

1.07 EXTERIOR ENCLOSURES

A. Provide temporary 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.

1.08 INTERIOR ENCLOSURES

A. Provide temporary partitions 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 gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.09 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
   1. Contractor shall repair damage to existing facilities caused by Construction operations.

B. Coordinate with Owner's security program.

C. Environmental Protection: Comply with EPA, OSHA and other regulatory requirements to prevent contamination of site, air, and public sewer/runoff.
   1. Provide additional work restrictions and protective measures as indicated on Civil/Site Drawings and as specified in Section 011000 - Summary.

1.10 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. Provide watering trucks, mulch, chemical stabilizers, or other control measures, complying with environmental protection requirements, to prevent airborne dust and silica from becoming a nuisance or health issue to Contractor personnel, neighboring properties, and the public.

1.11 WASTE REMOVAL

A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

C. Provide containers with lids. Remove trash from site periodically.

D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

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

1.12 PROJECT IDENTIFICATION

A. Project signs are not part of the Contract.
   1. The Contractor may, at their option and expense, elect to provide Project identification signs. Proposed signs shall comply with layout and details indicated on Drawings, and shall be submitted for Owner approval. Unauthorized signs are not permitted.

B. Provide project identification sign of design and construction indicated on drawings.
   1. Obtain and pay for any permits required for temporary signage by local authority having jurisdiction.

C. Erect on site at location(s) established by Architect.

D. Provide temporary directional signage as directed to facilitate site access for visitors and other construction personnel.

E. No other signs are allowed without Owner permission except those required by law.

1.13 FIELD OFFICES

A. Field Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture and drawing display table.
   1. Provide space for Project meetings, with table and chairs to accommodate 10 persons.
   2. Provide drinking water/water cooler and a private bathroom.
   3. Maintain the following materials in the field office, available to Architect and Owner's representative at all times:
      a. A complete, up-to-date set of all Contract Documents, including FCs, RFIs, PCOs, and COs.
      b. A complete, up-to-date set of all reviewed final shop drawings.
      c. The most recent, up-to-date version of Contractor's Progress Schedule.

B. Locate offices a minimum distance of 30 feet from other structures.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove temporary underground installations.

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

2.01 MATERIALS

A. Rough Carpentry: 2x lumber, in length and depth required for floor to ceiling partitions. Partitions shall not be fastened to existing ceilings or flooring to remain. Provide additional bracing and concealed attachments to building structure.

B. Gypsum Board: 1/2-inch gypsum wallboard; ASTM C 1396.

C. Insulation: Mineral-wool fiber blankets; with maximum flame-spread and smoke-developed ratings of 25 and 50 when tested per ASTM E 84.

D. Polyethylene Sheet: Minimum 10 mil reinforced sheeting; achieving a passing rating when tested per NFPA 701, and a maximum flame-spread rating of 15 when tested per ASTM E 84.

E. Walk-Off Mats: Dust-, dirt- and silica-control walk-off mats at each entrance into the enclosed construction area and each entrance through temporary partitions.

F. Hardware: Provide temporary hinges, latch, and lock at doors in temporary partitions. Where doors in temporary partitions are also indicated to serve as egress, provide ADA-compliant exit device and closer.

2.02 EQUIPMENT

A. Fire Extinguishers: Provide portable UL rated extinguishers. Provide extinguisher types rated for potential classes of fire expected for construction work indicated.

PART 3 EXECUTION

3.01 ELEVATOR AND STAIR USAGE

A. Use of new or existing elevator(s) is not permitted.

B. Use of existing stairs is permitted. Cover existing finishes and maintain stairs without damage. Clean and restore stairs to Owner's approval at Substantial Completion.

C. Use of new stairs is permitted. To prevent wear on finishes, do not install finishes on stairs until construction foot traffic can be minimized. Clean and prepare stair substrate thoroughly prior to installation of finishes. Cover finishes after installation, and clean and restore to Owner's approval at Substantial Completion.
   1. Provide temporary stairs until new stairs are available.

3.02 PEST CONTROL

A. Provide pest-control services at regular intervals, performed in compliance with regulations of state regulations, and by a pest-control firm licensed in the state where the project is located. Any chemicals and pesticides used shall be approved by EPA and local authority having jurisdiction. Contractor's pest control plan shall ensure the facility is free of termites, roaches, rodents, and other pests at time of Substantial Completion.
   1. Coordinate with Owner's Integrated Pest Management (IPM) plan where applicable.
   2. Provide Owner with a minimum 72 hours pre-notification for pest-control treatments.

3.03 TEMPORARY FIRE PROTECTION

A. Comply with International Fire Code, Chapter 33 "Fire Safety During Construction and Demolition" for preventing damage to structures under construction.
   1. Comply with NFPA 241 "Standard for Safeguarding Construction, Alteration, and Demolition Operations" for additional provisions and conditions that are not covered by Chapter 33 of the International Fire Code.

B. Provide a fire-prevention program, review with all personnel on site, and post fire-prevention information in clearly visible area. Coordinate fire-prevention program with local fire department.

C. Provide clearly labeled portable fire extinguishers.

D. Provide fire watch in compliance with OSHA requirements during and after use of all potential ignition sources, including but not limited to, welders, grinders, cutting torches, heating and electrical equipment, and lighting.

E. Do not allow smoking in areas under construction.

3.04 MOISTURE CONTROL

A. Prevent the absorption of moisture and humidity 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. Prior to building dry-in, store porous materials in a separate enclosed storage building. Keep all surfaces clear of standing water, and cover or otherwise protect all materials from water infiltration and damage. Do not enclose interior spaces until dry-in is complete and ventilation can remove excess moisture.

C. After building dry-in, provide temporary mechanical ventilation for humidity and moisture control until the building HVAC system is operational. Do not store or install material in the building until ambient temperature and humidity is within manufacturer's acceptable range. Do not install wet materials, and ensure that substrates are fully dry prior to installing other materials over them.

D. Provide continuous monitoring of installed materials. Remove gypsum board, wood products, and other mold-supporting products, if they become and remain wet for 48 hours. Remove and replace any materials showing visible signs of mold or mildew.

3.05 TEMPORARY FACILITY USAGE AND REMOVAL

A. Maintenance and Usage: Keep temporary facilities clean and in well-maintained condition for the duration of the Project. Prevent misuse of or damage to facilities by construction personnel. Make repairs to temporary facilities or replace facilities as required to keep them in good operating condition and in compliance with applicable OSHA, local permitting, and other applicable regulations.

B. Changeover: Coordinate changeover from temporary facilities to permanent facilities at Substantial Completion, unless an alternate arrangement for changeover has been agreed upon in writing by Owner.
   1. Contractor shall be responsible for repair, restoration, and cleaning of permanent facilities that are used for construction purposes after changeover.

C. Removal: Unless otherwise indicated, temporary facilities and controls are the property of the Contractor, and shall be removed upon Architect's approval when Contractor can demonstrate that they are no longer needed.
   1. Comply with construction waste management and recycling requirements for temporary facilities and materials that are not able to be reused.
   2. After removal of temporary facilities and controls, complete all permanent construction that was not accessible due to the presence of temporary facilities.
   3. Remove materials that have become soiled or contaminated due to construction vehicle traffic, parking, temporary field offices, oil or other chemical spillage, and other temporary usage, and replace with clean material. Complete grading, landscaping, paving, and other site improvements, and repair or restore all damage to existing or previously completed site improvements.

END OF SECTION 015000

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

A. Comparable Product: An unnamed product that is similar in quality and performance to named product(s).

B. Basis-of-Design Product: A specific product selected by the Architect for use in the design process; based on certain performance characteristics, physical qualities or details, a specialized finish type, pattern, or color, or other indicated characteristics.

1.02 WARRANTIES

A. Product warranties shall be provided in addition to and run concurrently to Contractor's general warranty/guarantee.
   1. Unless otherwise indicated, all warranty terms shall start on the date of Substantial Completion.

B. Manufacturer's Warranty: A standard warranty issued by the product manufacturer, covering production and material defects.

C. Special Warranties: Warranties in addition to standard manufacturer's warranty, covering fabrication, installation, or specific performance items such as weathertightness

D. Warranty Form: Warranty shall be provided on either manufacturer's standard form or on specified form. When a sample warranty form is not included in the Project Manual, the warranty shall be on mutually agreed form.

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.

2.02 NEW PRODUCTS

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

B. Refer to Section 014000 - Quality Requirements, for additional source quality control requirements.

C. Use of products having any of the following characteristics is not permitted:
   1. Made using or containing CFC's or HCFC's.
   2. Containing lead, cadmium, or asbestos.

2.03 PRODUCT OPTIONS

A. Products Specified with a Single Named Product: Where required by Owner due to facility standards, provide the named product; no options or substitutions allowed.

B. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

C. 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.

D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

E. Products Specified by Naming One or More Manufacturers with a Provision for Comparable Products: Unnamed comparable product may be submitted after award of Contract. Comply with requirements in "Comparable Products" article below.

2.04 BASIS-OF-DESIGN PRODUCTS

A. Where a product is specified by naming a Basis-of-Design, comply with the following:
   1. Where a list of additional manufacturers is provided, provide the Basis-of-Design product or a comparable product by one of the listed manufacturers, in compliance with "Comparable Products" article below.
   2. Where a list of additional manufacturers is not provided, provide the Basis-of-Design product, or submit a substitution request in compliance with Section 012500 - Substitution Procedures.
   3. Basis-of-Design characteristics shall include requirements in the Specifications and on the Drawings.
   4. Where the Basis-of-Design lists a specific finish, manufacturers wishing to submit as a Comparable Product or as a substitution shall certify that they are able to provide an exact match to the specified finish, or that they will provide a custom finish to match.

2.05 COMPARABLE PRODUCTS

A. Where a product is specified with a provision for comparable products, Contractors submitting a Comparable Product shall comply with the following:
   1. The submitted product shall not require changes to the Work, unless specifically approved by Architect. If changes are required, the Contractor shall resubmit the product as a substitution request, and the Contractor shall bear the cost of the changes, coordinate with other impacted contractors, and provide appropriate notations on record documents.
   2. Contractor shall provide, with the submittal, a detailed breakdown comparing the submitted product to at least one of the other listed products; list specified performance qualities, test results, dimensions, finish, and other critical properties.
   3. Contractor shall provide warranty data indicating that submitted Comparable Product complies with indicated warranty term(s).

B. Comparable product submittals are subject to Architect's final approval. If a proposed product is found to be unacceptable, Contractor shall revert to one of the named products.

2.06 COLOR/FINISH OPTIONS

A. Preselected Color/Finish: Where a specific manufacturer's premium or custom finish or color is indicated as the basis-of-design, other listed manufacturers shall certify that they can provide an exact match, or that they will provide pricing under the assumption that a custom finish or color will be required.

B. Color/Finish Selection: Unless specifically indicated to either be a custom color or to be selected from manufacturer's standard range, color and finish selections shall be made from manufacturer's full range of options, including premiums, metallics, wood grains, etc.

2.07 MAINTENANCE MATERIALS

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

B. Deliver to location designated by Owner; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. Refer to Section 012500 - Substitution Procedures.

3.02 OWNER-FURNISHED PRODUCTS

A. Owner-Furnished/Contractor-Installed Products: Refer to Section 011000 - Summary and to the Drawings for identification of Owner-furnished products for installation by Contractor. Products shall be identified as "Owner-furnished" or "OF/CI".
   1. Owner's Responsibilities for Owner-Furnished/Contractor-Installed Products:
      a. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
      b. Arrange and pay for product delivery to site.
      c. On delivery, inspect products jointly with Contractor.
      d. Submit claims for transportation damage and replace damaged, defective, or deficient items.
      e. Arrange for manufacturers' warranties, inspections, and service.
   2. Contractor's Responsibilities for Owner-Furnished/Contractor-Installed Products:
      a. Review Owner reviewed shop drawings, product data, and samples.
      b. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
      c. Handle, store, install and finish products.
      d. Repair or replace items damaged after receipt.

B. Owner-Furnished/Owner-Installed Products: Where products are indicated on Drawings as "NIC", "Owner-provided", or "OF/OI", the Owner shall furnish and install the indicated products. Coordinate with Owner for expected delivery dates.
   1. The Contractor shall allow for access by Owner's personnel or designated installer as necessary.
   2. The Contractor shall not be responsible for damage to in-place construction caused during delivery/installation of Owner-Provided products.

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. Provide protection of stored materials and products against theft, casualty, or deterioration.

B. 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. Refer to Section 017419.

1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor and roof areas.

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

D. Store with seals and labels intact and legible.

E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.

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

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

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

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

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

K. Do not store products directly on the ground.

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

M. Prevent contact with material that may cause corrosion, discoloration, or staining.

N. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

O. 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 016000

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.

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

1.02 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,

B. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.03 PROJECT CONDITIONS

A. Use of explosives is not permitted.

B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

D. Perform dewatering activities, as required, for the duration of the project.

E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

F. Dust and Silica Control: Execute work by methods to minimize raising dust and silica from construction operations. Provide positive means to prevent air-borne dust and silica from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust and silica that is generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

G. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. 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.

H. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

I. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

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

K. Hazardous Materials: Do not use materials or products that contain hazardous substances, for permanently installed products and materials, installation materials, or for cleaning or other construction use.

1.04 COORDINATION

A. See Section 011000 for occupancy-related requirements.

B. 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.

C. Notify affected utility companies and comply with their requirements.

D. 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.

E. 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.

F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

G. Coordinate completion and clean-up of work of separate sections.

H. 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.

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 016000 - 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 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Contractor shall locate and protect survey control and reference points.

D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

G. Utilize recognized engineering survey practices.

H. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.

I. 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.

J. Periodically verify layouts by same means.

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

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Fire Safety: Comply with provisions of current version of the International Fire Code, Chapter 33; "Fire Safety During Construction and Demolition" for preventing damage to structures under construction.
   1. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

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

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

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

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

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

3.05 ALTERATIONS

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

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000.

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

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Remove miscellaneous hangers, exposed nails not serving as fasteners, and similar protrusions; remove adhesive residue and tape; fill anchorage holes; and otherwise patch and restore surface to be a uniform substrate.
   4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; prepare substrate per manufacturer's requirements for successful application of new finish.
   5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing 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. See Section 011000 for other limitations on outages and required notifications.
c. Provide temporary connections as required to maintain existing systems in service.

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

F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
a. Use cutting methods such as sawing, drilling, and grinding that do not create impact stresses on existing construction. Do not use striking methods such as chopping or hammering.
3. Repair adjacent construction and finishes damaged during removal work.

G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. 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.

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

I. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.

J. Clean existing systems and equipment in all spaces impacted by alteration work.

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

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

3.06 CUTTING AND PATCHING

A. Refer to Alterations article above for additional requirements related to cutting and patching of existing construction.

B. Perform cutting and patching 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.

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

D. Employ skilled and experienced installer to perform cutting and patching.

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

F. Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to maintain existing fire ratings, to full thickness of the penetrated element.

H. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 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 and silica.

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

3.08 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. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.

G. 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.

H. Prohibit traffic from landscaped areas.

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

3.09 SYSTEM STARTUP AND ADJUSTING

A. Coordinate with requirements of Section 019113 - General Commissioning Requirements.

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

C. Notify Architect and Owner seven days prior to start-up of each item.

D. 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.

E. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

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

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

H. 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.

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

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

3.10 DEMONSTRATION AND INSTRUCTION

A. See Section 017900 - Demonstration and Training.

3.11 FINAL CLEANING

A. Execute final cleaning prior to Substantial Completion.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. 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.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Replace filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.

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.

3.12 CLOSEOUT PROCEDURES

A. Prior to Substantial Completion, complete the following:
   1. Provide startup, testing, and adjusting of all systems and equipment.

a. Demonstrate that air and water systems are balanced and that automatic temperature control system is in control of all equipment. This may require separate demonstrations if controls cannot be tested for applicable seasons of the year.
b. Submit written certification that testing/adjusting/balancing operations have been completed, and that systems are operation and under control in conformance with applicable specification section(s).
c. Submit written certification that all Building Commissioning has been completed.
d. Complete testing of the electronic security and detention systems and equipment, demonstrating security control.

2. Provide all inspections required by local authorities having jurisdiction to obtain Certificate of Occupancy, and provide written certification of completion of Special Inspections.
3. Provide preventive maintenance services for all equipment used prior to Substantial Completion, and provide initial maintenance servicing for all products and equipment that will be subject to ongoing maintenance/service contracts.
4. Provide final cleaning of all products, materials, and equipment, and provide touch up and restoration of exposed materials and finishes.
5. Provide fresh batteries in all battery-powered products and equipment.
6. Provide demonstration and training for Owner's personnel on all required systems and equipment.
7. Coordinate a walkthrough with the Owner and the local fire department and other emergency services.
8. To the maximum extent possible, remove temporary facilities and controls, construction equipment and tools, and similar items that are not part of the finished Work.
9. Coordinate changeover with the Owner of permanent utilities, insurance requirements, and building's permanent keying and lock system.

B. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

C. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

D. Conduct Substantial Completion inspection with representatives of Owner and Architect, and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
1. At the Architect's sole discretion, based on the amount of outstanding work, the Architect may elect to decline to issue a Certificate of Substantial Completion and will provide a list of outstanding items that are required to obtain Substantial Completion. The Contractor shall request reinspection after the indicated items have been completed.

E. Upon approval, the Architect shall prepare and distribute Certificate of Substantial Completion, and will include a list of outstanding items and Final Correction Punch List.

F. The Owner will occupy the building after Substantial Completion, as specified in Section 011000.

G. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

H. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

I. Prior to final completion, complete the following:

1. Ensure that the Certificate of Substantial Completion is fully executed by all required parties.
2. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.
3. Provide final pest and rodent control treatments and inspections.
4. Remove any remaining construction equipment, tools, and materials; perform additional cleaning required due to construction activities following Substantial Completion, and leave the site prepared for Owner occupancy.
5. Submit final demonstration and training materials and videos, as built/record documents, operation and maintenance binders, and warranty binders.
6. Submit final application for payment.

3.13 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.
   1. Contractor's maintenance responsibility shall be through Substantial Completion, unless a longer term is required by individual specification section.

B. Maintenance service shall not be assigned or transferred to any agent or third party without prior written consent of the Owner.

END OF SECTION 017000

SECTION 017419
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. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.

E. 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.

F. 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. Fire Safety: Comply with International Fire Code, Chapter 33 "Fire Safety During Construction and Demolition" and with NFPA 241 for provisions relating to accumulation and removal of combustible debris and waste.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 015000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

C. Section 016000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

D. Section 017000 - 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., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, 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. 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. Incinerator Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
      c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   5. 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.

6. 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.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

A. See Section 013000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 017000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 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. Communication: Distribute copies of the Waste Management Plan to Contractor's site superintendent, each subcontractor, Owner, and Architect.

C. 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.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Prebid meeting.
   2. Preconstruction meeting.
   3. Regular job-site meetings.

E. 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. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Coordinate with Division 2 demolition contractor to properly identify and separate recyclables. 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.

H. Recycling of Existing Carpet: Remove carpet; cut sheet carpet to 4 foot widths, tightly roll, and pack in container. Palletize carpet tiles on 36 inch or smaller pallets; maximum 4 foot high. Tightly bind or shrink wrap packaged carpeting. Include carpet padding where applicable.
1. Coordinate with Division 2 demolition contractor.
2. Coordinate with Division 9 carpet installer to include waste and scrap from new carpet work as applicable.
3. Refer to Carpet America Recovery Effort (CARE) guidelines and ship or deliver carpet to a designated reclamation/recycling facility. https://carpetrecovery.org/

I. Recycling of Existing Acoustical Ceiling Panels: Verify with ACP manufacturer that existing ceiling tiles can be recycled. Following verification, remove and stack ceiling tiles on pallets and wrap or band the pallet loads for pick up or delivery per recycler guidelines.
1. Coordinate with Division 2 demolition contractor.
2. Coordinate with Division 9 ACP manufacturer's recycling program; contact recycler when there is a full trailer load or approx. 30,000 square feet of removed ceiling. Coordinate with recycler to arrange pick up from the project site and transport to recycling facility at no cost.
3. If quantity to be recycled is less than 30,000 square feet, coordinate with ACP manufacturer for delivery to a consolidation point/facility at Contractor's cost.

J. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

K. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION 017419

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

A. Project Record Documents: Submit documents to Architect within 15 days after the date of Substantial Completion.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within 15 days after acceptance.
   2. Submit one PDF draft copy of completed documents within 15 days after the Closeout Conference. This copy will be reviewed and returned, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. After revisions are complete, submit one bound hard copy and PDF electronic file of revised final documents in final form within 15 days after Substantial Completion.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 15 days after acceptance.
   2. Make other submittals within 15 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 15 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.
   4. Miscellaneous record submittals.

B. Ensure entries are complete and accurate, enabling future reference by Owner.
   1. Include revised Drawings reissued during Bidding and Construction.

C. Store record documents separate from documents used for construction.
   1. Keep record documents in a location accessible to Architect for periodic review and reference.
   2. Maintain in legible condition. If record document set becomes damaged or excessively dirty, transfer comments to clean set prior to submittal to Architect.

D. Record information concurrent with construction progress.

E. 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.

F. Miscellaneous Record Submittals: Where other specification sections require completion certifications, or closeout or record submittals, submit in a single binder organized by specification section.

3.02 ASSEMBLY OF RECORD DOCUMENTS

A. Submittal for Architect's Review:
1. Submit PDF scanned copy of marked up prints.
2. Architect shall review and provide comment on completeness

B. Submittal for Distribution to Owner:
1. After Architect has approved for content and completeness, submit PDF scanned copy of final marked up prints, and submit hard copy originals.
2. Submit full set of Drawings, regardless of whether any modification or markings are on each sheet.

3.03 OPERATION AND MAINTENANCE DATA

A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

B. 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.

C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.04 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.

3.05 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:

1. Description of unit or system, and component parts.
2. Identify function, normal operating characteristics, and limiting conditions.
3. Include performance curves, with engineering data and tests.
4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Provide servicing and lubrication schedule, and list of lubricants required.

H. Include manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by controls manufacturer.

J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

K. Provide control diagrams by controls manufacturer as installed.

L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

O. Include test and balancing reports.

P. Additional Requirements: As specified in individual product specification sections.

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: 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.

D. Cover: Identify each binder on front and spine with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. 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.

G. 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.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Product data.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Photocopies of warranties and bonds.

3.07 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 15 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

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

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

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

E. Cover: Identify each binder on front and spine 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.

F. 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.

G. 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.

H. Provide photocopy of each warranty in operation and maintenance manuals; locate each warranty with applicable O&M data for product or equipment.

END OF SECTION 017800

SECTION 017900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products, systems, equipment, and other items where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance of products, systems, equipment, and as otherwise indicated in specific specification sections.

1.02 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit not less than four weeks prior to start of training.
   2. Revise and resubmit until acceptable.
   3. Provide an overall schedule showing all training sessions.
   4. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such as slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
   1. Identification of each training session, date, time, and duration.
   2. Sign-in sheet showing names and job titles of attendees.
   3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
   1. Format: DVD Disc.
   2. Label each disc and container with session identification and date.

3. Where available, provide manufacturer's pre-produced training videos in conjunction with live demonstration and training video.

1.03 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Instructor shall be certified by the manufacturer or fabricator of system.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable, and if acceptable to Owner.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Complete demonstrations within two weeks after the date of Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Complete demonstrations within two weeks after the date of Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site, utilizing installed products and equipment, unless otherwise indicated.

B. Provide training in minimum two hour segments.

C. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

D. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   2. Typical uses of the O&M manuals.

E. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.

3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
4. Discuss cleaning products and procedures, including recommended cleaning products and products that are detrimental to equipment operation or finishes.
5. Provide hands-on training on all operational modes possible and preventive maintenance.
6. Emphasize safe and proper operating requirements; discuss relevant health and safety issues, warning or error indications, and emergency procedures and shutdown.
7. Discuss common troubleshooting problems and solutions. Include minor adjustments for resolving noise, vibration, and improving system efficiency.
8. Discuss any peculiarities of equipment installation or operation.
9. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage. Include discussion of continuing maintenance agreements and procedures.
10. Review recommended tools and spare parts inventory suggestions of manufacturers.
11. Review spare parts and tools required to be furnished by Contractor.
12. Review spare parts suppliers and sources and procurement procedures.

F. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION 017900

SECTION 018119
INDOOR AIR QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Provide Indoor Air Quality (IAQ) Management Plan to remain in force during the construction period.

B. Chapter 3 of the Sheet Metal and Air Conditioning National Contractors' Association (SMACNA) IAQ Guideline for Occupied Buildings Under Construction, 2nd Edition 2007, available from SMACNA (703-803-2980 or www.smacna.org).

1.02 SUBMITTAL

A. Construction Indoor Air Quality Management Plan (CIAQM Plan).

PART 2 OBJECTIVES DURING CONSTRUCTION

2.01 PROTECTION

A. Store all materials and equipment in a protected area (inside warehouse or storage trailer). Protect materials and equipment that are too large or heavy to store in a trailer from water and dirt/dust/debris.
   1. OPTION: When stored outside, provide two layers of minimum 8-mil poly on the ground and elevate equipment or material a minimum of 4 inches to allow water to run off. Secure top and sides with two layers of 8-mil poly to prevent water penetration and dust/dirt accumulation.

B. Protect HVAC equipment from dust and odors. Do not store equipment in areas near painting, pressure washing, or excavation. Do not operate equipment during cutting or grinding of masonry or concrete.
   1. Refer to Division 23 for construction filter requirements for protection of mechanical duct systems during construction.
   2. Clean ductwork when installed. Cap ends with poly during construction to prevent contamination.
   3. Do not operate HVAC system until the exterior walls, roof, glass, doors and building filters are properly installed.
   4. If air handlers must be used during construction, provide filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 at each air-handling unit. Provide specified prefilters and final filters for operation during construction or install temporary 4-inch MERV 8 filters at each return air grille for operation during construction.
   5. Replace all filtration media immediately prior to Substantial Completion.
      a. Filtration media installed in air-handling units shall have a Minimum Efficiency Reporting Value (MERV) of 8.
   6. Do not perform Testing and Balancing until dust or odor generating activities are completed.

2.02 SOURCE CONTROL

A. Minimize IAQ contaminants introduced by construction materials.

B. Store waste construction materials a minimum of 30 feet away from the building.

C. Do not smoke within 30 feet of the exterior building perimeter.

2.03 PATHWAY INTERRUPTION

A. Provide barriers to contain construction areas to allow a portion of the building to be cleaned and then operate the HVAC system in that cleaned area. Acceptable barriers include dust curtains and temporary walls.
   1. Protect areas of the building in which HVAC is operational by physical barriers from areas of the building not acceptable for operation of the HVAC system.

B. Maintain areas within 30 feet of outdoor air intakes free of dust, dirt, debris, and volatile materials while the HVAC system is in operation.

2.04 HOUSEKEEPING

A. As dust accumulates at the Site, it can become airborne when disturbed by nearby activity. Similarly, spills or excess applications of products containing solvents will increase odors at the Site. Leaving the Site wet or damp for more than a day could result in the growth of mold and bacteria. Therefore, Site cleanup and maintenance is important to maintaining good IAQ during construction.

B. Perform the following to control contaminants at the Site:
   1. Suppress dust with wetting agents or sweeping compounds.
   2. Provide an efficient dust collection method (e.g. a damp rag, wet mop, or vacuum equipped with a high efficiency particulate arrester (HEPA) filter or wet scrubber).
   3. Remove spills or excess applications of solvent-containing products immediately. Provide low-VOC emitting spot removers and cleaning agents near occupied areas.
   4. Remove accumulated water and keep work areas as dry as possible, including the use of dehumidification, if necessary.
   5. Once building is enclosed, vacuum with HEPA filtered vacuum cleaners to prevent settled dust from becoming airborne again.
   6. Protect porous materials from exposure to moisture. Replace items that remain damp for more than four hours.

END OF SECTION 018119

SECTION 018316
NFPA 285 EXTERIOR WALL ASSEMBLY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for providing exterior wall assemblies demonstrably in compliance with NFPA 285 testing requirements. Therefore, the Contractor shall be responsible for ensuring all exterior wall assemblies are in compliance with NFPA 285 if the Contractor proposes any exterior wall component not otherwise specified/indicated as part of the basis-of-design or comparable assemblies for *this* Project.

B. NFPA 285 is an exterior wall *assembly* test (not a *component* test) specific to the component(s) tested and reported as part of that assembly. Therefore, compliance with NFPA 285 is required FOR ALL EXTERIOR WALL ASSEMBLIES, and documentation of compliant assemblies including all of the assembly's components is required to demonstrate compliance with the code requirements.

1. Substituting any alternate exterior wall component is not acceptable without pre-approval from the authorities having jurisdiction (AHJ), or acceptable (to the AHJ and Architect) documentation (e.g., engineering judgment(s) or ICC-ES report(s)) demonstrating a passing assembly test with the proposed substituted product(s).
    a. For example, if a substitution is submitted to revise the specified (basis of design) cavity insulation (or air barrier, or any other exterior wall component), said substituted cavity insulation must have been tested (and passed) in combination with all of the other provided exterior wall components.
2. NFPA 285 is not a *component* test, so documentation claiming said component is "NFPA 285 compliant" shall not be acceptable, unless it can be demonstrated that said component is acceptable with the other required and provided exterior wall components.

C. Exterior wall assemblies that must comply with NFPA 285 include those containing the following combustible components:

1. Any foam plastic insulation, such as polystyrene, polyisocyanurate, and polyurethane foams. This includes cavity insulation, insulation installed within studs, and/or exterior insulation and finish systems (EIFS).
2. Any combustible water-resistive barrier installed over 40 feet above the finish grade, such as felts, building wrap, and membrane or fluid-applied air barriers.
3. Fiber-reinforced polymer (FRP) cladding without fireblocking, in excess of area limitations, or otherwise not meeting limitations or exceptions imposed by applicable building code.
4. High-pressure decorative exterior-grade compact laminate (HPL) cladding installed over 40 feet above the finish grade or otherwise not meeting limitations imposed by the applicable building code.
5. Metal composite material (MCM) cladding installed over 40 feet above the finish grade or otherwise not meeting limitations imposed by applicable building code.

1.02 DEFINITIONS

A. Exterior Wall Assembly: For NFPA 285 compliance purposes, the exterior wall assembly is one that encloses interior spaces and does not include parapets, exterior "wing" walls, or site-related walls (e.g., retaining walls or screen walls).

B. Basis-of-Design: For NFPA 285 compliance purposes, all exterior wall assemblies indicated in the Contract Documents shall be considered compliant, including specific basis-of-design components. Such basis-of-design assemblies are to establish a compliant NFPA 285 design

and do not limit use of other acceptable manufacturers' comparable tested assemblies with comparable tested components.

C. Comparable: For NFPA 285 compliance purposes, comparable assemblies, including specific comparable components, may be allowed. Such comparable components are meant to allow for alternative compliant NFPA 285 designs.

D. Exterior Wall Assembly Component(s): Products which are a part of an exterior wall assembly, including, but may not be limited to: each type of veneer, foam plastic insulation, water-resistive barriers, air barriers, sheathing, flashings, blocking, lintels, and substrate construction (e.g., masonry and steel studs).

1.03 PERFORMANCE REQUIREMENTS

A. Exterior Wall Assemblies: Shall comply with applicable "NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components."

1. Although the title of the applicable test includes the text "Nonload-bearing," and the standard itself may include assembly descriptions such as curtain wall assemblies, be advised that the NFPA 285 test requirements apply to every exterior wall assembly on this Project.

1.04 ACTION SUBMITTALS

A. Comparable NFPA 285 Exterior Wall Assemblies: Submit request for consideration for each proposed comparable exterior wall assembly or exterior wall assembly component to the AHJ for their approval PRIOR TO submitting to the Architect for their review. Identify each component required and, where there are options (e.g., documentation may indicate something like, "any gypsum wallboard at least 1/2 inch thick), each optional component proposed. Provide cross-reference to the basis-of-design assembly for each comparable assembly/component proposed to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Provide ICC-ES Report, Technical Evaluation Report, Material Test Report, engineering judgment, or other published data acceptable to AHJ to demonstrate proposed comparable exterior wall assembly (including all of the actual exterior wall components to be provided on this Project) has been tested or evaluated to comply with the NFPA 285 test requirement.

B. Substitution Exterior Wall Assembly Component Requests: Submit request for consideration of each proposed substituted product in accordance with the Substitution requirements included in this Project Manual. Identify any and all products to be substituted. Include Specification Section number and title and Drawing numbers and titles.

1. Provide ICC-ES Report, Technical Evaluation Report, Material Test Report, engineering judgment, or other published data acceptable to AHJ to demonstrate proposed substituted exterior wall assembly (including all of the actual exterior wall components to be provided on this Project) has been tested or evaluated to comply with the NFPA 285 test requirement.
2. Obtain and submit approval from the AHJ PRIOR TO SUBMITTING SUBSTITUTION for consideration by the Architect.

1.05 INFORMATIONAL SUBMITTALS (NO ACTION WILL BE TAKEN BY THE ARCHITECT)

A. Basis-of-Design NFPA 285 Exterior Wall Assemblies: If the assembly(ies) to be provided on this Project is/are identical to the basis-of-design, in every way (components and detailing), "Action Submittals" shall not be required and only a certification from the Contractor indicating compliance is required. Identify each component product for the record.

1.06 COORDINATION AND TESTING

A. Coordinate affected trades and construction to ensure compliance with the basis-of-design exterior wall assembly or documented NFPA 285 testing.

B. If the basis-of-design, approved (by the AHJ and Architect) comparable, or approved (by the AHJ and Architect) substitution assemblies are not provided, submit the proposed alternative exterior wall assembly and component(s) for actual full NFPA 285 testing.

1. Upon obtaining a passing NFPA 285 test, submit supporting documentation in accordance with “Action Submittals” herein.
2. Submit for and provide a PASSING grade/test sufficiently in advance of operations and construction schedule as to not delay the Project.
3. If such testing fails, submit/provide for additional testing until such time as the proposed alternative exterior wall assembly(ies) achieves a PASSING grade.
4. Organize preconstruction meetings between the trades involved in the exterior wall assembly to discuss the implications of not providing the basis-of-design or approved comparable components and how compliant components will ultimately be incorporated into the exterior wall assembly, or to determine if testing will be required.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 EXTERIOR WALL ASSEMBLY PRE-CONSTRUCTION CONFERENCE

A. If the basis-of-design for all exterior wall assembly components are not provided:

1. Review preliminary pre-construction checklist and guide included at the end of this Section for additional requirements for those components you plan on submitting that are NOT the basis-of-design.
2. Conduct such pre-construction conference PRIOR TO submitting or procuring any exterior wall assembly component that is not the basis-of-design.

EXTERIOR WALL ASSEMBLY PRE-CONSTRUCTION CONFERENCE GUIDE

If the basis-of-design of the exterior wall assembly components are not provided, such exterior wall components will require the coordinated efforts of all of the exterior wall trades on the construction, design, and ultimate NFPA 285-compliant exterior wall assemblies of such components. If a NFPA 285 test is required (or multiple tests are required because of failing tests), such testing of the proposed exterior wall assembly will be costly and time-consuming.

Therefore, the Contractor and affected exterior wall subcontractors must have a working knowledge of the NFPA 285 test and shall work toward a common goal of achieving a compliant and pre-approved assembly.

Contractor may request an electronic version of this document for editing purposes, completion of this guide, and for its use.

Send a copy of this guide to the affected trades and/or attendees so they can come to the Conference prepared to discuss these topics and to fill in as much of this information as possible prior to the conference, or be prepared to fill in such information at the conference.

CHECKLIST:

Submit and/or complete the following prior to conducting the Pre-Construction Conference. Confirm any additional submittal requirements with the relevant specification sections. Check those items below that you have completed or received “Approved” submittals from the Architect. Delete those that do not apply.

___ Product data ___ Shop drawings ___ Product Certificates

___ Product test reports ___ Installer qualifications ___ Compatibility docs

___ _____

MANDATORY ATTENDEES

Attendance by the following parties and affected trades is mandatory. Identify and ensure any other trades or parties involved or affected by the installation of the exterior wall assembly components are also present. Check those below who actually attend the meeting. Omit those that do not apply.

___ Owner and/or Owner's Representative ___ Architect

___ Contractor ___ Air barrier installer/subcontractor

___ Exterior foam plastic insulation subcontractor(s) (includes cavity, stud, and/or EIFS)

___ Exterior metal panel subcontractor(s) ___ Waterproofing subcontractor

___ FRP subcontractor ___ HPL subcontractor

___ _____ ___ _____

REVIEW OF RELEVANT PROJECT CONTRACT SPECIFICATION SECTIONS:

Review the Contract Specifications and identify and note any products that may be necessary for compliance, so all parties understand what is required of them. Submit any substitutions in accordance with these Documents. Please note: Project specific sections may vary – edit as necessary.

SPEC SECTION	PRODUCTS (IF ANY)
018316	
042000	
071113	
071326	
071413	
071416	
07241X	
072500	
072726	
072727	
074213	

REVIEW OF RELEVANT PROJECT *CONTRACT* DRAWINGS:

Review the Contract Drawings and identify and note any products that may be necessary for compliance, so all parties understand what is required of them. Submit any substitutions in accordance with these Documents.

PROJECT CONTRACT DRAWING OR DETAIL NUMBER	PRODUCTS (IF ANY)

REVIEW OF RELEVANT PROJECT *SHOP / SUBMITTAL* DRAWINGS:

Review the Contract Drawings and identify and note any products that may be necessary for compliance, so all parties understand what is required of them. Resubmit those submittals that have not been approved by the Architect.

PROJECT SUBMITTAL / SHOP DRAWING REFERENCE	PRODUCTS (IF ANY)

REVIEW OF COMPONENTS / PRODUCTS:

Review and identify the components that will actually be provided on this Project. Delete those that do not apply.

COMPONENT	ACTUAL COMPONENT TO BE PROVIDED FOR PROJECT
FOAM PLASTIC INSULATION – FIELD OF WALL	
FOAM PLASTIC INSULATION – CAVITY	
FOAM PLASTIC INSULATION – STUDS	
FOAM PLASTIC INSULATION (WALL) – VOIDS / CRACKS / SHIMS	
FLUID-APPLIED MEMBRANE – PERMEABLE - WALL	
FLUID-APPLIED MEMBRANE – IMPERMEABLE -WALL	
SELF-ADHERED MEMBRANE – PERMEABLE - WALL	
SELF-ADHERED MEMBRANE – IMPERMEABLE -WALL	
TRANSITION MEMBRANE – SELF-ADHERED	
PRIMER	
MASTIC / TERMINATION SEALANT	
MCM – WALL	
HPL – WALL	
FRP - WALL	

OTHER PRE-CONSTRUCTION NFPA 285 AND EXTERIOR WALL ASSEMBLY CONSIDERATIONS AND COMMENTS:

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END OF EXTERIOR WALL ASSEMBLY PRE-CONSTRUCTION CONFERENCE GUIDE

END OF SECTION 018316

SECTION 018317
EXTERIOR BUILDING ENCLOSURE AIR BARRIER REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This section includes administrative and procedural requirements for accomplishing an airtight building enclosure that controls infiltration or exfiltration of air, including but may not be limited to:
   1. The airtight components of the building enclosure and the joints, junctures and transitions between materials, products, and assemblies forming the air-tightness of the exterior building enclosure shall be “the air barrier system.”
   2. Coordinate between trades, schedule and sequence the Work, and provide preconstruction meetings, inspections, tests, and related actions.
   3. Reports performed by Contractor, independent agencies, and governing authorities.
   4. Construct the building enclosure with a continuous air barrier system to control air leakage into (infiltration) and out of (exfiltration) conditioned spaces. The air barrier system shall have the following characteristics:
      a. Continuous, with all joints sealed.
      b. Structurally supported to withstand positive and negative air pressures applied to the building enclosure.
      c. Connections between:
         1) Foundation and walls.
         2) Walls and windows and doors.
         3) Different wall systems.
         4) Wall and roof.
         5) Walls, floors, and roofs across construction joints, control joints and expansion joints.
         6) Walls, floors and roofs to utility, pipe and duct penetrations.
   5. Make all penetrations of the air barrier membrane or system and paths of air infiltration / exfiltration air-tight.

1.02 RESPONSIBILITIES

A. Contractor responsibilities:
   1. Coordinate affected trades and sequence construction to ensure continuity of the air barrier system, joints, junctures, and transitions between materials and assemblies of materials and products, from substructure to walls to roof.
      a. Coordinate the sequence of activities to accommodate required services with a minimum of delay.
      b. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
   2. Provide quality assurance procedures, testing and verification as required.
      a. Schedule times for inspections, tests, taking samples, and similar activities.
   3. Facilitate inspections, tests, and other quality-control services required.
      a. Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested.

b. Notify the agency sufficiently in advance of operations to permit assignment of personnel.
c. Services include, but are not limited to, the following:
1) Provide access to the Work.
2) Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3) Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4) Deliver samples to testing laboratories.
5) Provide security and protection of samples and test equipment at the Project Site.

4. Organize pre-installation conference and preconstruction meetings between the trades involved in the whole building's air barrier system to discuss where each trade begins and ends and the responsibility and sequence of installation of all the air-tight joints, junctures, and transitions between materials, products and assemblies of products specified in the different sections, to be installed by the different trades.
5. Provide mockup of exterior wall assembly as required.
6. Coordinate the Work and trades to provide an airtight building enclosure.
a. Continuity of the air barrier materials and products with joints to provide assemblies.
b. Continuity of all exterior enclosure assemblies with joints and transition materials to provide an exterior enclosure air barrier system.
c. Specific quality-control requirements for individual construction activities are also indicated in other applicable sections of the specifications. Ensure each subcontractor is adequately and satisfactorily performing the quality assurance documentation, tests and procedures required by each such section.
d. Inspections, tests, and related actions do not limit Contractor`s quality-control procedures that facilitate compliance with Contract Document requirements.
e. Requirements to provide an airtight exterior building enclosure is not limited by quality-control services performed by Architect, Owner, or authorities having jurisdiction and are not limited by provisions of this section.

1.03 PERFORMANCE REQUIREMENTS

A. Materials: Used for the air barrier system in the opaque envelope shall have an air permeance not to exceed 0.004 cfm/ft2 under a pressure differential of 0.3 in. water (1.57psf) (0.02 L/s.m2 @ 75 Pa) when tested in accordance with ASTM E 2178.

B. Assemblies of materials and components: Shall have an air permeance not to exceed 0.04 cfm/ft2p under a pressure differential of 0.3 in. water (1.57psf) (0.15 L/s.m2 @ 75 Pa) when tested in accordance with ASTM E 2357.

1.04 SUBMITTALS

A. Submit a written report of each inspection, test, or similar service performed by the air barrier manufacturer's technical representative, to the Owner, Architect, and Contractor.
1. Report Data: Written reports of each inspection, test, or similar service shall include, but may not be limited to, the following:
a. Date of issue.
b. Project title and number.
c. Name, address, and telephone number of testing agency.
d. Dates and locations of samples and tests or inspections.

e. Names of individuals making the inspection or test.
f. Designation of the Work and test method.
g. Identification of product and Specification Section.
h. Complete inspection or test data.
i. Test results and an interpretation of test results.
j. Ambient conditions at the time of sample taking and testing.
k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
l. Name and signature of laboratory inspector.
m. Recommendations on retesting.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 REPAIR AND PROTECTION

A. Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes.

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protect the Work, regardless of the assignment of responsibility for inspection, testing, or similar services.

AIR BARRIER SYSTEM PRE-INSTALLATION CONFERENCE GUIDE

PURPOSE:

Few building construction components require the coordinated activities of more different trades on the construction, design, and management teams than an air barrier system. Once an air barrier has been covered, any remedies for problems with the components or installation can be costly and time-consuming.

Contractor and subcontractors must have a working knowledge of the air barrier installation, proper sequencing, and must work toward a common goal. Through the use of the integrated mockup panel and this Pre-Installation Conference Guide, gaining such knowledge should be enhanced.

Source: Much of this checklist utilizes content from Tremco's "*Air Barrier Project Management – Pre-Construction Meeting Checklist"* document.

Contractor may request an electronic version of this document for editing purposes and for your use.

Send a copy of this guide to the affected trades and/or attendees so they can attend the Conference prepared to discuss these topics and to fill in as much of this information as possible prior to the meeting, or be prepared to fill them in at the meeting.

CHECKLIST:

Submit and/or complete the following prior to conducting the Pre-Installation Conference. Confirm any additional submittal requirements with the relevant specification sections. Check those items below that you have completed or received "Approved" submittals from the Architect. Delete those that do not apply.

____ Product data	____ Shop drawings	____ Product Certificates
____ Product test reports	____ Installer qualifications	____ Samples
____ Compatibility docs	____ Integrated mockup	____ Quality Assurance Program
____ ABAA certifications	____ Warranty sample	____ _____

____ Air Barrier System Subcontractor reviewed submittals of other indicated/specified trade(s)

MANDATORY ATTENDEES:

Attendance by the following parties and affected trades is mandatory. Identify and ensure any other trades or parties involved or affected by the installation of the air barrier system components are also present. Check those below who actually attend the meeting. Delete those that do not apply.

____ Owner and/or Owner's representative
____ Architect
____ Owner's Testing Agency (if hired to inspect ABS)
____ Contractor
____ Air barrier installer / subcontractor
____ Masonry subcontractor
____ Air barrier manufacturer's technical representative
____ Roofing subcontractor
____ Window opening subcontractor
____ Sheathing subcontractor
____ Exterior Insulation subcontractor
____ Concrete subcontractor
____ Exterior Metal Panel subcontractor
____ CFSF-S subcontractor
____ Steel frame (hollow metal) subcontractor
____ Waterproofing subcontractor
____ _____
____ _____

REVIEW OF RELEVANT PROJECT CONTRACT SPECIFICATION SECTIONS:

Review the Contract Specifications and identify and note any modifications that may be necessary, so all parties understand what is required of them. Submit any modifications via appropriate supplemental documents (FC or PCO). Edit specification sections below to match those of this Project.

SPEC SECTION	MODIFICATIONS (IF ANY)
018317	

REVIEW OF RELEVANT PROJECT CONTRACT DRAWINGS:

Review the Contract Drawings and identify and note any modifications that may be necessary, so all parties understand what is required of them. Submit any modifications via appropriate supplemental documents (FC or PCO).

PROJECT CONTRACT DRAWING OR DETAIL NUMBER	MODIFICATIONS (IF ANY)

REVIEW OF RELEVANT PROJECT SHOP / SUBMITTAL DRAWINGS:

Review the submittals and identify and note any modifications that may be necessary, so all parties understand what is required of them. Resubmit those submittals that have not been approved by the Architect.

PROJECT SUBMITTAL / SHOP DRAWING REFERENCE	MODIFICATIONS (IF ANY)

REVIEW OF PRODUCTS:

Review the type of air barrier system that will be provided on the Project and identify each component. Delete those that do not apply.

COMPONENT	ACTUAL PRODUCT TO BE PROVIDED FOR PROJECT
SPF INSULATION – FIELD OF WALL	
SPF INSULATION (WALL) – VOIDS / CRACKS / SHIMS	
SPF INSULATION – FIELD OF ROOF	
FLUID-APPLIED MEMBRANE – PERMEABLE - WALL	
FLUID-APPLIED MEMBRANE – IMPERMEABLE -WALL	
SELF-ADHERED MEMBRANE – PERMEABLE - WALL	
SELF-ADHERED MEMBRANE – IMPERMEABLE -WALL	
SELF-ADHERED MEMBRANE – PERMEABLE - ROOF	
SELF-ADHERED MEMBRANE – IMPERMEABLE -ROOF	
TRANSITION MEMBRANE – SELF-ADHERED	
PRIMER	
MASTIC / TERMINATION SEALANT	

CONSTRUCTION TIE-IN RESPONSIBILITY:

Air barrier systems are successful when a full building envelope/enclosure – without penetrations, voids, holes, gaps, and cracks – is complete. This is critical when numerous trades are involved in the tying-in of the air barrier system to all facets of the exterior building envelope. Utilize the table below to ensure everyone knows who is responsible for the indicated tie-in.

TIE-IN AREA	SUBCONTRACTOR RESPONSIBLE FOR TIE-IN
EXTERIOR FOOTING TO EXTERIOR FOUNDATION WALL	
EXTERIOR FOUNDATION TO EXTERIOR WALL	
SLAB-ON-GRADE TO WALL (EXTERIOR AND INTERIOR)	
SLAB-ON-GRADE JOINTS	
SLAB-ON-GRADE PENETRATIONS	
EXTERIOR WALL TO STEEL FRAME/HOLLOW METAL (E.G., DOORS AND WINDOWS)	
EXTERIOR WALLS TO ALUMINUM FRAMES (E.G., WINDOWS AND LOUVERS)	
DIFFERENT EXTERIOR WALL SYSTEMS (E.G., MASONRY TO METAL)	
EXTERIOR HEAD-OF-WALL TO SLOPING ROOF	
PARAPET WALLS TO ROOF	
EXTERIOR WALL JOINTS	
EXTERIOR SHELF ANGLES	
EXTERIOR STEEL LINTELS	
EXTERIOR WALL PENETRATIONS (E.G., PIPES, DUCTS)	
ROOF PENETRATIONS	
ROOF PERIMETER	

COMPATIBILITY REVIEW:

Each trade/installer shall identify materials that may have potential compatibility issues. For example, some membranes may be subject to decomposing when placed in contact with other materials or components, especially sealants and primers; or may deteriorate if left exposed to the elements and are not protected. Delete those trades/installers that do not apply to this Project.

TRADE / INSTALLER	ISSUES / RESOLUTIONS
AIR BARRIER	
WINDOW	
STEEL FRAME (HOLLOW METAL)	
CFSF-S	
EXTERIOR METAL PANELS	
WATERPROOFING	
MASONRY	
ROOFING	
SHEATHING	
CONCRETE	
INSULATION	
FLEXIBLE FLASHING	
METAL FLASHING	
STRUCTURAL STEEL	

SUBSTRATE PRIMER CONSIDERATIONS:

Indicate whether the substrate for the air barrier material requires the use of a primer, and if so, identify the actual product to be used on the Project. Delete those that do not apply.

SUBSTRATE	YES	NO	PRODUCT
CMU			
SHEATHING			
CONCRETE			
PRECAST			
METAL PANELS			
ROOF SUBSTRATE BOARD			
FLEXIBLE FLASHING			
METAL FLASHING			
WATERPROOFING			
STEEL FRAME / HOLLOW METAL			
STRUCTURAL STEEL			

SUBSTRATE PREPARATION CONSIDERATIONS:

Indicate whether the substrate for the air barrier material requires special treatment or preparation (e.g., flush joints in CMU), and if so, identify the method to be used on the Project. Delete those that do not apply.

SUBSTRATE	YES	NO	METHOD / PROCEDURE	SUBCONTRACTOR RESPONSIBLE
CMU				
SHEATHING				
CONCRETE				
PRECAST				
METAL PANELS				
ROOF SUBSTRATE BOARD				
WINDOW FRAMES				
FLEXIBLE FLASHING				
METAL FLASHING				
WATERPROOFING				
STEEL FRAME / HOLLOW METAL				
STRUCTURAL STEEL				

JOINT CONSIDERATIONS:

It is critical for all joints, gaps, voids, cracks, seams, etc. to be sealed/closed for the air barrier to function properly (based on air barrier manufacturer's instructions). If applicable, indicate the method to be used to close the joints and who is responsible. Delete those that do not apply.

TYPE OF JOINT	METHOD USED TO CLOSE JOINT	SUBCONTRACTOR RESPONSIBLE
CMU		
SHEATHING		
CONCRETE		
PRECAST		
METAL PANELS		
ROOF SUBSTRATE BOARD		
WINDOW FRAMES		
STEEL (HOLLOW METAL) FRAMES		
HEAD-OF-WALL		
OMITTED CMU BLOCK		

INSTALLATION TEMPERATURES:

A major factor in contributing to a successful air barrier system installation is to monitor and install the components within the proper temperature ranges and weather conditions. Indicate below the proper temperature range for each component; the procedure for maintaining the proper temperature range; and the party responsible for maintaining the proper temperature range in accordance with the requirements. Delete those that do not apply.

COMPONENT	PROPER TEMPERATURE RANGE	PROCEDURE AND SUBCONTRACTOR RESPONSIBLE
SPF INSULATION – FIELD OF WALL		
SPF INSULATION (WALL) – VOIDS / CRACKS / SHIMS		
SPF INSULATION – FIELD OF ROOF		
FLUID-APPLIED MEMBRANE – PERMEABLE - WALL		
FLUID-APPLIED MEMBRANE – IMPERMEABLE -WALL		
SELF-ADHERED MEMBRANE – PERMEABLE - WALL		
SELF-ADHERED MEMBRANE – IMPERMEABLE -WALL		
SELF-ADHERED MEMBRANE – PERMEABLE - ROOF		
SELF-ADHERED MEMBRANE – IMPERMEABLE -ROOF		
TRANSITION MEMBRANE – SELF-ADHERED		
PRIMER		
MASTIC / TERMINATION SEALANT		

AIR BARRIER PROTECTION:

The air barrier system shall be protected during construction. Indicate below how the components will be protected (method used), by whom, and when. Delete those that do not apply.

COMPONENT	METHOD USED FOR PROTECTION	SUBCONTRACTOR	WHEN
SPF INSULATION – FIELD OF WALL			
SPF INSULATION (WALL) – VOIDS / CRACKS / SHIMS			
SPF INSULATION – FIELD OF ROOF			
FLUID-APPLIED MEMBRANE – PERMEABLE - WALL			
FLUID-APPLIED MEMBRANE – IMPERMEABLE -WALL			
SELF-ADHERED MEMBRANE – PERMEABLE - WALL			
SELF-ADHERED MEMBRANE – IMPERMEABLE -WALL			
SELF-ADHERED MEMBRANE – PERMEABLE - ROOF			
SELF-ADHERED MEMBRANE – IMPERMEABLE -ROOF			
TRANSITION MEMBRANE – SELF-ADHERED			
PRIMER			
MASTIC / TERMINATION SEALANT			

AIR BARRIER REPAIR:

Discuss how any damage, including but not limited to, accidental holes in the air barrier system, will be repaired – and by whom. Indicate the actual product to be used to perform any repairs in the air barrier components. Delete those that do not apply.

COMPONENT	PRODUCT TO BE USED FOR REPAIR	SUBCONTRACTOR RESPONSIBLE
SPF INSULATION – FIELD OF WALL		
SPF INSULATION (WALL) – VOIDS / CRACKS / SHIMS		
SPF INSULATION – FIELD OF ROOF		
FLUID-APPLIED MEMBRANE – PERMEABLE - WALL		
FLUID-APPLIED MEMBRANE – IMPERMEABLE -WALL		
SELF-ADHERED MEMBRANE – PERMEABLE - WALL		
SELF-ADHERED MEMBRANE – IMPERMEABLE -WALL		
SELF-ADHERED MEMBRANE – PERMEABLE - ROOF		
SELF-ADHERED MEMBRANE – IMPERMEABLE -ROOF		
TRANSITION MEMBRANE – SELF-ADHERED		
PRIMER		
MASTIC / TERMINATION SEALANT		

INSULATION SECURED TO OR OVER AIR BARRIER MATERIAL:

Address any concerns or issues of installing insulation over the air barrier material (foundation, walls, and roof), such as preparation, securing, or fastening methods. Delete those that do not apply.

INSULATION TYPE	METHOD FOR SECUREMENT	CONCERNS (IF ANY)
SPF		
XPS		
POLYISO		
EPS		
EPX		

CFSF-S LOCATIONS: DELETE IF THEY DO NOT APPLY.

Where CFSF-S is a component in the exterior wall assembly, the air barrier installer may need to mark the material itself to indicate where the framing is located. The insulation subcontractor, in turn (when the insulation is not the air barrier), may need to transfer those marks onto the insulation. If any of the above is required, discuss and identify below. Delete those that do not apply.

COMPONENT	SUBCONTRACTOR RESPONSIBLE FOR LOCATION MARKS, IF NECESSARY
SHEATHING	
AIR BARRIER	
INSULATION	

OTHER CONSIDERATIONS OR COMMENTS:

_____

_____

_____

_____

END OF AIR BARRIER SYSTEM PRE-INSTALLATION CONFERENCE GUIDE

END OF SECTION 018317

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 DEFINITIONS

A. "Remove": Carefully detach or dismantle items from existing construction and properly dispose of or recycle off site, unless items are indicated to be salvaged or reinstalled.

B. "Salvage" or "Remove and Salvage": Carefully detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition. If indicated to be reinstalled, store in a secure area until ready for reinstallation.

C. "Reinstall" or "Remove and Reinstall": Carefully detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

D. "Existing", "Existing to Remain" or "ETR": Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1. Not all existing construction to remain shall be noted with one of these terms on the Drawings; the intent is to assist the Contractor in areas where it may be difficult to determine. Existing construction shall be assumed to remain unless specifically noted to be removed - either when noted with "remove", "salvage", or "reinstall" terminology per above, or when indicated graphically in accordance with the Demolition Legend on the Demolition Drawings.

1.02 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

1. Hold the preinstallation meeting at the Project site; perform a walkthrough to review the existing conditions and highlight areas of particular concern.
2. Review structural concerns and deficiencies in the existing building(s).
3. Review demolition schedule, including phasing.
4. Review specific elements indicated to remain or to be salvaged, and review procedures for protection and / or storage of those elements.
5. Review Owner's occupancy and noise requirements.

B. Coordination: Coordinate phasing and staging requirements with Owner's occupancy of the existing building.

1. Coordinate with Division 01 sections for Owner's occupancy, phasing, and noise requirements.
2. Owner's personnel shall remove existing equipment and furnishings from spaces to be demolished prior to the beginning of the Work. Except for any built-in equipment specifically indicated on the Drawings to remain and be protected, the Contractor will not be required to work in furnished areas and will not be responsible for the condition of furniture or equipment left in place.

1.04 SUBMITTALS

A. Photographic Documentation: Submit photographic record of the existing conditions, either as still photographs or as a video-recorded walkthrough. Contractor shall perform walkthrough of existing conditions with Owner's representative prior to site mobilization.
   1. Photographic documentation shall clearly show existing damage and wear on existing surfaces that may be interpreted as being caused by subsequent demolition and construction operations.
   2. For still photographs, submit marked-up plan(s) indicating locations where photographs were taken and direction photograph is facing. Include a written narrative to describe existing damage and other conditions as deemed necessary.
   3. For video recordings, include a spoken narrative to describe locations and existing conditions, or provide a supplementary written narrative.
   4. Submit all photographic documentation as digital photo / video files, and supplementary narratives and plans as PDF files. Submit as part of the initial submittal package required prior to release of the first request for payment.

B. Shop Drawings: Submit demolition plans and survey as required by OSHA and local AHJs.
   1. Engineering Survey: Provide structural survey of existing building(s). Provide additional surveys if unforeseen conditions are revealed during the course of the Work.
   2. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
   3. Indicate elements to be salvaged and elements that are to remain in place and protected.

C. Refrigerant Certification: Provide a written statement, signed by refrigerant recovery technician, certifying that refrigerant materials were recovered in accordance with EPA regulations. Statement shall include certified technician's full name and business name as applicable, address, and date of recovery.

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

1.05 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Technicians removing or disposing of any equipment or appliance containing ozone-depleting refrigerants shall be certified in accordance with EPA Section 608 Technician Certification.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Perform an initial walkthrough and visual survey of the existing building(s). Take photographic documentation of the existing conditions per submittal requirements above.

B. Perform structural engineering survey of the existing conditions as required by OSHA and local AHJs.

3.02 PREPARATION

A. Remove and salvage items indicated to be reinstalled or turned over to Owner. Clean items and protect in secure packaging, and store in a secure location on-site.

3.03 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. All demolition work shall be considered unclassified. Barring discovery of hazardous materials or undocumented structural components, where elements are indicated to be demolished, the bid price shall be for complete demolition of the element, regardless of the individual component makeup of that element.

B. Refrigerant Recovery: Certified recovery technician shall remove refrigerant from all applicable equipment and appliances prior to the start of demolition activities.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered during performance of the Work.
   1. If suspected hazardous materials are discovered during demolition operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

D. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Fire Safety: Comply with applicable requirements of the International Fire Code; Chapter 33, and with NFPA 241.
      a. Use of explosives is not permitted.
      b. Hot Work: Remove all combustibles from areas where hot work is required, including use of cutting torches, welding, or heating equipment. Maintain fire watch for entire duration of hot work and for a minimum 30 minutes after completion of hot work.
         1) Keep portable fire extinguishers within 30 feet of locations where hot work is being performed for entire duration.
      c. Maintain egress routes and emergency access routes at all times; do not allow demolished materials to accumulate and block routes.
      d. Remove combustible demolished materials from the building by the end of each work day. Temporarily store combustible materials in noncombustible containers with self-closing lids until they can be removed from the building.
      e. Do not burn demolished material on site.
   3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   4. Provide, erect, and maintain temporary barriers and security devices.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   7. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

E. Do not begin removal until receipt of notification to proceed from Owner.

F. Do not begin removal until built elements to be salvaged, relocated, or reinstalled have been removed.

G. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.

2. Prevent movement or settlement of adjacent structures.
3. Stop work immediately if adjacent structures appear to be in danger.

H. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

I. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Comply with requirements of Section 017419 - Construction Waste Management and Disposal.
2. Dismantle existing construction and separate materials.
3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

J. If items of potential historic interest are discovered during the course of the Work, such as cornerstones or plaques, consult with the Owner prior to proceeding. If Owner wishes to preserve these items, carefully remove and salvage, and store in on-site location designated by Owner.

3.04 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.05 SELECTIVE DEMOLITION FOR ALTERATIONS

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

B. Separate areas in which demolition is being conducted from areas that remain occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.

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

D. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.

3. Repair adjacent construction and finishes damaged during removal work.
4. Patch to match new work.

E. Remove existing work as indicated and required to accomplish new work.
1. Remove items indicated on drawings.

F. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
3. Coordinate with Section 011000 - Summary for limitations on outages and required notifications to Owner, as applicable.
4. Verify that abandoned services serve only abandoned facilities before removal.
5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

G. Floor Finishes: After removal of existing floor finishes including backings, underlayments, and thick set mortar beds, remove all residual adhesives and glue. Provide grinding, sanding, or shot-blasting of existing concrete floor slab to achieve the proper surface to receive new indicated floor finish. Coordinate slab surface preparations required for each new indicated floor finish with appropriate subcontractor.

H. Carpet: Coordinate with Division 9 carpet manufacturer and Division 1 Construction Waste Management section for recycling of existing sheet or tile carpet. Remove carpet carefully and remove all loose debris and metal (tacks, nails, stretcher strips). Coordinate with Carpet and Rug Institute guidelines for removal and disposal of adhesives. Cut sheet carpeting and carpet padding into four foot sections and tightly roll and wrap. Stack carpet tile on 36 inch or smaller pallets, no higher than 4 feet, and shrink wrap. Store in a protected, dry location in preparation for delivery to reclamation/recycling facility.

I. Acoustical Ceiling Panels: Coordinate with Division 9 acoustical ceiling panel manufacturer and Division 1 Construction Waste Management section. Remove ceiling tiles and stack neatly on pallets; wrap or band pallet loads. Store in a protected, dry location in preparation for delivery to recycling facility.

J. Concrete: Cut neatly in straight lines with power-driven saw with diamond-tooth blade or other type specifically intended for concrete and masonry. Break up and remove carefully, avoiding damage to adjacent flooring that will remain exposed in the finished work.

K. Masonry: Remove masonry in whole units at exposed surfaces, new openings, and unless otherwise indicated, to allow for toothing-in of new masonry.
1. Solid masonry may be cut with power saw where masonry edges will be concealed by the finished work. Do not cut hollow masonry.

L. Existing Surfaces to Receive Finishes: Remove miscellaneous hangers, exposed nails not serving as fasteners, and similar protrusions; remove adhesive residue and tape; fill anchorage holes; and otherwise patch and restore surface to be a uniform substrate suitable for applied finishes.

3.06 DEBRIS AND WASTE REMOVAL

A. Comply with requirements of 017419 - Construction Waste Management and Disposal.

B. Remove all debris, trash, and other materials not indicated to be salvaged or reinstalled from the site.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 024100

SECTION 035400
CAST UNDERLAYMENT

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens).

B. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.

C. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.02 SUBMITTALS

A. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.

B. Certificate: Certify that products meet or exceed specified requirements.

C. Manufacturer's Instructions.

1.03 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section, with references available on request for jobs of similar size and scope.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.05 FIELD CONDITIONS

A. Do not install underlayment until floor penetrations and peripheral work are complete.

B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during and 72 hours after installation of underlayment.

C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cementitious Underlayment:
   1. ARDEX Engineered Cements; ARDEX K 15 with ARDEX P51 Primer.
   2. Custom Building Products; CL-150 Self-Leveling Underlayment with CP-A Acrylic Primer.
   3. Dayton Superior Corporation; EconoLevel with J42 Primer.
   4. Dependable Chemical Co., Inc; SKIMFLOW ES with PRIMER A.
   5. H.B. Fuller Construction Products, Inc; TEC Level Set 200 Self-Leveling Underlayment with TEC Multipurpose Primer.

6. Lambert Corporation; Lambco L-16 Self-Level with Primer L16.
7. LATICRETE International, Inc; LATICRETE SUPERCAP SC500 with LATICRETE SUPERCAP Primer Plus.
8. MAPEI Corporation; Ultraplan 1 Plus with Primer T.
9. Maxxon Corporation; Level-One EZ with Multi-Use Acrylic Primer.
10. Substitutions: See Section 016000 - Product Requirements.

2.02 MATERIALS

A. Cast Underlayments, General:
   1. Comply with applicable code for combustibility or flame spread requirements.
   2. Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.

B. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
   1. Compressive Strength: Minimum 4000 pounds per square inch after 28 days, tested per ASTM C109/C109M.
   2. Flexural Strength: Minimum 1000 psi after 28 days, tested per ASTM C348.
   3. Density: 125 pounds per cubic foot, nominal.
   4. Final Set Time: 1-1/2 to 2 hours, maximum.
   5. Thickness: Capable of thicknesses from feather edge to maximum 3-1/2 inch.
   6. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E84.

C. Aggregate: Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer.

D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.

E. Primer: Manufacturer's recommended type.

F. Joint and Crack Filler: Latex-based filler, as recommended by manufacturer.

2.03 MIXING

A. Site mix materials in accordance with manufacturer's instructions.

B. Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.

C. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION

A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.

B. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.

C. Vacuum clean surfaces.

D. Prime substrate in accordance with manufacturer's instructions. Allow to dry.

E. Close floor openings.

3.03 APPLICATION

A. Install underlayment in accordance with manufacturer's instructions.

B. Pump or pour material onto substrate. Do not retemper or add water.
   1. Pump, move, and screed while the material is still highly flowable.
   2. Be careful not to create cold joints.
   3. Wear spiked shoes while working in the wet material to avoid leaving marks.

C. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.

D. For final thickness over 1-1/2 inches, place underlayment in layers. Allow initial layer to harden to the point where the material has lost its evaporative moisture. Immediately prime and begin application of the subsequent layer within 24 hours.

E. Where additional aggregate has been used in the mix, add a top layer of neat mix (without aggregate), if needed to level and smooth the surface.

F. If a fine, feathered edge is required for transition, steel trowel the edge after initial set, but before it is completely hard.

3.04 CURING

A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.

B. Air cure in accordance with manufacturer's instructions.

3.05 PROTECTION

A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.

B. Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION 035400

SECTION 042000
UNIT MASONRY

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ACI SP-66 - ACI Detailing Manual.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

C. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

E. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

F. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement.

G. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

H. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.

I. ASTM C33/C33M - Standard Specification for Concrete Aggregates.

J. ASTM C55 - Standard Specification for Concrete Building Brick.

K. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.

L. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.

M. ASTM C91/C91M - Standard Specification for Masonry Cement.

N. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.

O. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.

P. ASTM C151 - Standard Test Method for Autoclave Expansion of Hydraulic Cement.

Q. ASTM C270 - Standard Specification for Mortar for Unit Masonry.

R. ASTM C331/C331M - Standard Specification for Lightweight Aggregates for Concrete Masonry Units.

S. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.

T. ASTM C476 - Standard Specification for Grout for Masonry.

U. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.

V. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

W. ASTM C641 - Standard Test Method for Iron Staining Materials in Lightweight Concrete Aggregates.

X. ASTM C780 - Standard Test Methods for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

Y. ASTM C887 - Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar.

Z. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry.

AA. ASTM C1072 - Standard Test Methods for Measurement of Masonry Flexural Bond Strength.

BB. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms.

CC. ASTM D1227/D1227M - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.

DD. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

EE. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

FF. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry.

GG. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing.

HH. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls.

II. BIA Technical Notes No. 20 - Cleaning Brickwork.

JJ. BIA Technical Notes No. 28B - Brick Veneer/Cold-Formed Steel Framed Walls.

KK. BIA Technical Notes No. 46 - Maintenance of Brick Masonry.

LL. NCMA TEK 08-04A - Cleaning Concrete Masonry.

MM. NCMA TEK 12-01B - Anchors and Ties for Masonry.

NN. NCMA TEK 12-02B - Joint Reinforcement for Concrete Masonry.

OO. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting at the Project site one week before starting work of this section; require attendance by all relevant installers.

1.03 SUBMITTALS

A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
   1. Installation Instructions for Cold- and Hot-Weather: Provide a detailed description of the procedures that will be used to comply with TMS 402/602 for cold- and hot-weather, including materials and equipment that will be used.

B. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories, for each type of masonry.
   1. Provide elevations indicating steel reinforcing bar locations; provide details of reinforcing including bends and cross-sections, in accordance with ACI SP-66.
   2. Indicate control and expansion joint locations.
   3. Provide flashing details indicating corners, end dams, and other special conditions.

C. Samples: Face brick and mortar selections will be verified in mock-up panel. Provide samples of exposed accessories and trim requiring color selection.

D. Material Certificates and Test Reports: Provide manufacturer's certificates and test reports for the following:
   1. Masonry Units:
      a. Brick: Size data including fabrication tolerances.
      b. Brick: Efflorescence test, per ASTM C67/C67M.

c. Masonry Units: Compressive strength test data.
d. Concrete Masonry: Data indicating aggregates comply with ASTM C33/C33M (normal weight), ASTM C331/C331M (lightweight), and ASTM C618 (fly ash).

2. Mortar and Grout Mixes: Provide description and proportion of materials for each type of mortar and grout.
3. Provide material certificates for each type of metal accessory, including reinforcing bars, joint reinforcement, veneer ties and anchors, and other indicated accessories, indicating compliance with requirements.

E. Cold- and Hot-Weather Procedures: Provide a detailed description of the procedures that will be used to comply with TMS 402/602 for cold- and hot-weather, including materials and equipment that will be used.

F. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Fire Rated Assemblies: Provide products that comply with fire-resistance ratings indicated as determined by testing according to ASTM E119, by equivalent testing thickness, or by means acceptable to authorities having jurisdiction.

C. Source Limitations for Masonry: Provide each type of masonry unit from a single manufacturer's plant, sourced through a single supplier. Each type of masonry unit shall maintain consistency of color and texture for all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.

1. Source Limitations for Decorative Concrete Masonry: Provide decorative concrete veneers from a manufacturer with a quality control agreement with water repellant manufacturer, certifying that units have been manufactured with integral water repellant to conform to performance requirements indicated. Provide current certificate from water repellant manufacturer confirming conformance.

D. Source Limitations for Mortar: Provide each mortar mix from a single manufacturer, sourced through a single supplier. Each required mortar mix shall maintain consistency of each component, including cementitious materials and aggregate, to provide consistent color and texture for all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.

E. Aggregate for Concrete Masonry Units: If bottom ash is used as aggregate in the CMU, the Source for the bottom ash shall be a power station that has a minimum of ten (10) years continuous experience as a supplier of quality material as verified by independent certified laboratory testing and no defects in the marketplace.

F. Pre-Construction Testing: Owner shall engage an independent testing agency to perform field quality control tests, in accordance with Section 014000 - Quality Requirements.

1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M compressive strength requirements.
2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry in accordance with ASTM C140/C140M compressive strength requirements.

1.05 FIELD CONDITIONS

A. Wall Cavity Protection: Provide temporary waterproof sheet coverings over masonry walls at top of walls, sills, parapets, and other horizontal projections. Install coverings at end of each workday, when rain or precipitation is expected, and after masonry work is completed.

1. Extend coverings down vertically at least 24 inches on each side of masonry wall. At multi-wythe walls where one wythe is more than 24 inches taller than other wythe(s), extend covering as required to fully cover all wythes and cavities.
    a. At roof parapets, extend covering on rear side of parapet full height down to roof deck/membrane, until vertical protection/roof membrane is installed.
2. Secure all coverings in place with tape or adhesive that does not leave residue, or other securement method that does not penetrate or damage permanent construction.
3. Provide protective coverings at sills and horizontal projections that can also serve as protection from mortar droppings.
4. Provide protective coverings over tops of foundation walls containing insulation to protect from exposure to sun and from construction traffic damage.
5. Do not remove or allow removal of temporary covers until permanent top of wall protection elements (coping, sill, roof surface, waterproof membrane, etc) are underway.

B. Cold- and Hot-Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
2. Special Shapes: Provide nonstandard blocks configured for corners, lintels, headers, other detailed conditions, and as indicated below.
    a. Provide bullnose units for outside corners.
    b. Provide solid block with bullnosed top edges at free-standing CMU walls and where top of block is exposed at window sills and similar applications.
3. Concrete Masonry Units: ASTM C90, lightweight.
    a. Exposed Faces: Manufacturer's standard color and texture.
    b. Aggregates:
        1) Lightweight Aggregates: Lightweight aggregate shall strictly comply with ASTM C331/C331M, ASTM C151, and ASTM C641. Drying shrinkage of aggregate shall not exceed 0.10% at 100 days.
        2) Waste concrete, scoria, and aglite shall not be permitted.
4. Decorative Concrete Block: ASTM C90, normal weight.
    a. Pattern: Manufacturer's standard ground-face pattern.
    b. Size: Match standard nominal dimensions per "Concrete Block" paragraph above.
    c. Color: To be selected by Architect from manufacturer's full range.
    d. Provide integral water repellent and companion mortar additive at all exterior decorative CMU.
    e. Topcoat: Where recommended by manufacturer of ground-face units, provide clear acrylic top-coat, minimum 20 percent solids content.

5. Units with Integral Water Repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.
    a. Performance of Units with Integral Water Repellent:
        1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
            (a) No water visible on back of wall above flashing at the end of 24 hours.
            (b) No flow of water from flashing equal to or greater than 0.032 gallons per hour at the end of 24 hours.
            (c) No more than 25 percent of wall area above flashing visibly damp at end of test.
        2) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
        3) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
    b. Use only in combination with mortar that also has integral water repellent admixture.
    c. Use water repellent admixtures for masonry units and mortar by a single manufacturer.
    d. Available Products:
        1) ACM Chemistries; RainBloc.
        2) BASF Aktiengesellschaft; Rheopel Plus.
        3) Grace Construction Products (W.R. Grace & Co.); Dry-Block.

B. Concrete Brick:
    1. Actual Size: 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.
    2. Concrete Building Brick: ASTM C55; lightweight, solid, for interior or concealed use.

2.02 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M.
    1. Colored Mortar: Premixed cement as required to match Architect's color sample.
    2. Available Products:
        a. Argos USA; Magnolia Masonry Cement.
        b. Holcim (US) Inc.; Rainbow Mortamix Custom Color Masonry Cement.
        c. Lehigh Hanson; flamingo Colored Cement.
        d. Roanoke Cement; a division of Titan America; Colored Masonry Cement.
        e. York Building Products, a Stewart Company; Workrite Colored Masonry Cement.
        f. Substitutions: See Section 016000 - Product Requirements.

B. Surface Bonding Mortar (Parge Coat): ASTM C887.

C. Mortar Aggregate: ASTM C144.

D. Grout Aggregate: ASTM C404.

E. Water: Clean and potable.

F. Accelerating Admixture: ASTM C494/C494M, Type C; nonchloride, noncorrosive type for use in cold weather; approved by manufacturer for use in masonry mortar.

G. Integral Water Repellent Admixture for Mortar: Polymeric liquid admixture added to mortar at the time of manufacture.
    1. Use only in combination with masonry units manufactured with integral water repellent admixture.

2. Use only water repellent admixture for mortar from the same manufacturer as water repellent admixture in masonry units.
3. Meet or exceed performance specified for water repellent admixture used in masonry units.

2.03 DAMPPROOFING

A. General: Dampproofing may be provided as a Contractor option to parge coat, applied to exterior face of below grade CMU back up wall (prior to insulation or grouting).

B. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
1. Emulsified Asphalt Coating (Brush or Spray Applied): ASTM D1227/D1227M, Type II, Class 1 - Mineral colloid emulsifying agents with non-asbestos fibers or Type III, Class 1 - Mineral colloid emulsifying agents without fibrous reinforcement.
2. Accessory Materials: Provide asphaltic primer, glass fiber reinforcement, and compatible patching compounds as required and as recommended by manufacturer.
3. Manufacturers:
a. Henry Company.
b. Karnak Corporation.
c. Mar-Flex Systems, Inc.
d. W. R. Meadows, Inc.
e. Substitutions: See Section 016000 - Product Requirements.

2.04 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; uncoated.

B. Joint Reinforcement, Anchorage, and Ties, General: Comply with NCMA TEK 12-02B, NCMA TEK 12-01B, and requirements below.
1. Use ladder type joint reinforcement, unless otherwise indicated. Truss type reinforcement may be used only when approved by Architect, at walls indicated not to have vertical reinforcing steel and not to be grouted.
2. Provide prefabricated joint reinforcement sections for corners and for T-intersections.
3. Provide joint reinforcement in minimum 10 foot lengths.
4. At multi-wythe/cavity wall applications, size all anchors, ties, and reinforcement for depths of cavities indicated, including indicated insulation thickness as applicable. Ties shall maintain full adjustability at veneer wythe without affecting insulation.
5. At cavities with space between wythes wider than 4-1/2 inches (air space + insulation depth), provide high strength ties engineered for cavity depths indicated.

C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

D. Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at composite walls and subgrade walls where all wythes are of the same material.
1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

a. Provide two side rods for each wythe that is nominal 6-inch depth or greater, and one side rod for each wythe that is nominal 4-inch depth.

E. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at cavity walls/masonry veneer walls.
1. Type: Ladder, with adjustable ties or tabs spaced at 16 in on center.
2. Material: Hot-dip galvanized steel.
3. Size: 0.1483 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from each masonry face.
4. Vertical adjustment: Not more than 1 1/4 inches.

F. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.

G. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
1. For Anchorage to Structural Steel Framing: Crimped wire anchors for welding to frame, 0.25 inch thick, with triangular/trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

H. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B. Provide at masonry veneer walls with metal framing backup. At cavity walls with CMU backup and masonry veneer, masonry veneer anchors may be used in conjunction with standard horizontal joint reinforcing, at Contractor's option, in lieu of adjustable multiple wythe joint reinforcement.
1. Anchor Plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners.
2. Wire Ties: Manufacturer's standard shape, 0.1875 inch thick.
a. Size wire ties to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from masonry face.
3. Vertical Adjustment: Not less than 3-1/2 inches.
4. Products:
a. Construction Tie Products; CTP-16.
b. Heckmann Building Products; 213 + 263.
c. Hohmann & Barnard; HB-213-2x.
d. Wire Bond; RJ-711.
e. 3GEN Masonry Products; H-13-H or H-13-V.

I. Metal-to-Metal Fasteners (for Steel Studs): Self-drilling, self-tapping #10 hex screws; fabricated of either 304 stainless steel or of steel with corrosion resistant polymer coating tested to ASTM B117. Fasteners shall include integral neoprene or EPDM washer.
1. Products:
a. ELCO Construction Products; Dril-Flex with Stalgard Finish.
b. Heckmann Building Products; #668 TEK Self-Drilling Steel Stud Screw.
c. ITW Commercial Construction North America; Teks Maxiseal with Climaseal Finish, or Scots Long Life Teks (stainless steel).

2.05 FLASHINGS

A. Combination Nonasphaltic Flashing Materials - Copper:
   1. Copper/Polymer Film or Fabric Flashing: 5 oz/sq ft copper sheet laminated between two sheets of polymer film. Minimum Puncture Resistance of 780 psi, when measured in accordance with ASTM E154/E154M.
      a. Available Products:
         1) Advanced Building Products, Inc.; Copper Sealtite 2000.
         2) Hohmann & Barnard, Inc; Copper-Fabric NA.
         3) STS Coatings, Inc.; Wall Guardian Copper TWF.
         4) York Manufacturing, Inc; Multi-Flash 500 Series.

B. Combination Non-Asphaltic Flashing Materials - Stainless Steel:
   1. 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.
      a. Manufacturers:
         1) Hohmann & Barnard, Inc; Mighty-Flash Stainless Flashing.
         2) Prosoco; R-Guard SS ThruWall.
         3) STS Coatings; Wall Guardian Stainless Steel TWF.
         4) York Manufacturing, Inc; Multi-Flash SS.

C. Factory-Fabricated Flashing Corners and End Dams: Stainless steel.

D. Termination Bars: One-inch wide, fabricated of 0.125-inch PVC, 0.090-inch extruded aluminum, or 0.075-inch stainless steel; compatible with membrane and adhesives.

E. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.

F. Flashing Sealant/Adhesive/Liquid Seam Tape: Polyether-based, 100% solids, moisture-curing elastomeric products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates; and that are compatible with asphalt-free flashing materials and air barrier materials. Traditional mastic is not acceptable.
   1. Available Products:
      a. Master Builders Solutions; MasterSeal NP150.
      b. STS Coatings; GreatSeal LT-100 Liquid Tape.
      c. York; UniverSeal US-100 Liquid Tape.

2.06 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
   1. Provide nominal 2.5-inch "standard" and "tee" configurations to suit application unless indicated otherwise.

B. Joint Filler: Closed cell polypropylene or non-chlorinated polyethylene foam; oversized 50 percent to joint width; self expanding; in maximum lengths available.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
   1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations. Provide in depth matching cavity depth without gap at front or back of mesh. Fabricate approximately 10 inches high with minimum 6 inch high dovetail shape projections.

a. Available Products:
1) Advanced Building Products, Inc; Mortar Break DT.
2) Heckmann Building Products; WallDefender.
3) Hohmann & Barnard, Inc.; Mortar Trap.
4) Mortar Net Solutions; MortarNet.
5) Wire-Bond; Cavity Net DT (3611D).
b. At cavities with air space greater than 2 inches, provide companion drainage product by one of the manufacturers above; nominal 1/2-inch thickness by 20 inches wide, to be field inserted into cavity in a "U" configuration. Basis-of-Design is "Mortar Catch 352" by Advanced Building Products, Inc.

D. Bond Break: ASTM D226/D226M, Type I ("No.15") asphalt felt or polyethylene tape.

E. Weeps/Cavity Vents:
1. Cellular Type: Extruded propylene with honeycomb design.
a. Color(s): To be selected by Architect from manufacturer's full range.
b. Available Products:
1) Advanced Building Products, Inc.; Mortar Break weep mesh.
2) Blok-Lok Limited; Cell-Vent.
3) CavClear/Archovations, Inc.; CavClear Weep Vent.
4) Heckmann Building Products Inc.; No. 85 Cell Vent.
5) Hohmann & Barnard, Inc.; Quadro-Vent.
6) Mortar Net Solutions; WeepVent.
7) Wire-Bond; Cell Vent.
2. Bed Joint Weep System: Corrugated plastic drainage system incorporating continuous drainage strip within cavity portion of wall with integral weephole extensions at 9-1/2 inches on center located above flashing in the bed joint of the veneer masonry. Provide at masonry units over 32 inches long, and as indicated.
a. Available Products:
1) Heckmann Building Products; Core/Cavity Vent Weep System #367.
2) Masonry Technology Incorporated (MTI); Cavity Weep CV 5010.

F. Reinforcing Positioners: Provide wire positioners in bed joints to keep steel reinforcing bars centered in cells, fabricated of 0.1483-inch hot-dip galvanized steel wire.
1. Available Products:
a. Heckmann Building Products, Inc.; No. 376 Rebar Positioner.
b. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
c. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 LINTELS

A. Masonry Lintels: Fabricated of bond beam CMUs, with texture matching adjacent standard CMU. Provide reinforcing bars and grout in accordance with structural requirements. Provide temporary supports until cured.

B. Precast Concrete Lintels: Comply with structural requirements for concrete strength and reinforcing. Precast U-lintels fabricated in accordance with performance standards of PCI MNL-116 with 3500 psi concrete for standard lintels and 6000 psi concrete for prestressed lintels as manufactured by Cast-Crete are acceptable in lieu of rectangular section lintels.

C. Steel Lintels: Refer to Section 055000 - Metal Fabrications.

2.08 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Reinforced masonry: Type S.
   3. Mortar parge coats: Type S.
   4. Exterior, loadbearing and non-loadbearing, and interior, loadbearing and non-loadbearing: Type N, except as indicated above.
      a. Interior, non-loadbearing masonry may use Type O at Contractor's option.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
   1. Use colored mortar for all veneer masonry. Separate colors shall be required for each type and color of veneer.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. For installation in cold or hot weather, comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
   1. CMU Coursing: One unit and one mortar joint equal 8 inches.
   2. Brick Coursing: Either two or three units with accompanying mortar joints shall equal 8 inches, based on basis-of-design brick size(s) indicated above.

C. Provide running bond for all masonry units unless otherwise indicated.

D. Tool all mortar joints slightly concave where they will be exposed, unless otherwise indicated.
   1. Provide flush joints where they will be concealed by surface-applied treatments or finishes other than paint; including but not limited to tile, wall coverings, fluid-applied or SPF air barriers, or membranes.

3.05 PLACING AND BONDING

A. Remove broken, cracked, chipped, or otherwise damaged masonry units from pallets and set aside. Do not use unless they may be field cut to remove damaged section, for installation where special shape is required to fit construction.

B. Create a consistent blend for each type of veneer masonry by mixing units from a minimum of three pallets.

C. Provide asphalt felt or polyethylene tape bond-breaker between clay masonry and concrete or other masonry types. Rake back joints for sealant.

D. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

E. Lay hollow masonry units with face shell bedding on head and bed joints.

F. Remove excess mortar and mortar smears as work progresses.

G. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.

H. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

I. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
   1. Do not cut masonry unless it is required for certain shapes, such as rowlock sills, or unless it is unavoidable due to fitting around other construction, such as wall penetrations.
   2. Cut masonry edges shall not be visible in the final work. Where special shapes are required that would expose cut edges, they shall be plant-fabricated.

3.06 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.07 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. At parapets and below-grade/foundations, provide joint reinforcement at 8 inches o.c. vertically.

E. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.

F. Lap joint reinforcement ends minimum 6 inches.

G. Do not extend reinforcement across control, expansion, and other building movement joints.

H. Reinforce corners and intersections with prefabricated T- or L-shaped reinforcing.

I. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

J. Embed ties and anchors in mortar joint and extend at least halfway through masonry veneer unit; with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry and/or Metal Framing Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - COMPOSITE UNIT MASONRY

A. Install continuous horizontal joint reinforcement at 16 inches o.c. vertically, except at below grade foundation walls install at 8 inches o.c. vertically.

B. Where concrete foundations are indicated, tie below-grade masonry to concrete with rigid anchors spaced at maximum 8 inches o.c. vertically.

C. Coordinate with parging/dampproofing and with installation of insulation, where indicated.

3.11 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Remove or cover protrusions or sharp edges that could puncture flashings.
   2. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 16 inches minimum on vertical surface of backing:
   1. Anchor vertical leg of flashing into backing with a termination bar and sealant.

C. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
   1. Notch and hem exterior corners of drip edges to eliminate sharp, exposed cut metal edges at locations below 6' - 0" above grade.

D. Support flexible flashings across gaps and openings.

E. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

A. Comply with requirements on Structural Drawings for type of lintel at each opening, additional lintel sizing, reinforcement, and installation requirements.

B. Install loose steel or precast lintels over openings, where indicated.

C. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.

1. Allow masonry lintels to attain specified strength before removing temporary supports.

D. Maintain minimum 8 inch bearing on each side of opening, unless otherwise indicated.

3.13 GROUTED COMPONENTS

A. Comply with requirements on Structural Drawings for locations of structural grouted components and accessories, including but not limited to, grouted bond beams, reinforced unit masonry walls, (including locations and sizing of vertical steel bar reinforcing), grouted solid CMU, and composite wall collar joints.

B. Lap splices minimum 24 bar diameters.

C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

D. Place and consolidate grout fill without displacing reinforcing.

3.14 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

C. Provide control and expansion joints at locations indicated on Drawings, and as follows:
   1. At changes in wall height.
   2. At changes in wall thickness
   3. At change in support (eg: transition from foundation support to floor slab support).
   4. Adjacent to corners of walls within a distance equal to no more than half the maximum control joint spacing.
   5. Wall intersections.
   6. Do not place control joints closer than 16 inches to edge of wall openings (doors, windows, louvers, ducts).
   7. Distance between joints shall not exceed a length to height ratio of 1.5:1.
   8. Distance between joints shall not exceed 25 feet where no openings occur between joints.
   9. Distance between joints shall not exceed 20 feet where openings occur between joints.

3.15 BUILT-IN WORK

A. As work progresses, install built-in metal door frames, anchor bolts, and plates and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Mix mortar (or grout) to a 4-inch maximum slump consistency and hand trowel into place in accordance with Steel Door Institute (SDI-100).
   2. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.16 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.17 CUTTING AND FITTING

A. Cut and fit for chases, pipes, conduit, and other penetrations. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.18 PARGING

A. Dampen masonry walls prior to parging.

B. Parge cavity side of CMU below grade back-up wythe with a single coat of surface-bonding mortar to a total thickness of 1/4 inch.

1. In lieu of parging, Contractor may at its option apply bituminous dampproofing, at a minimum rate of 1.25 gal per 100 sq. ft. Apply primer if required by manufacturer and comply with manufacturer's installation requirements.

C. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.

D. Strike top edge of parging at 45 degrees.

3.19 FIELD QUALITY CONTROL

A. Field Inspection: The Owner shall engage an independent inspection agency to perform field quality control inspections and prepare field reports.

1. The Contractor shall permit full access to inspectors in order to perform inspections, including use of temporary facilities and equipment such as scaffolding or lifts.
2. Do not enclose cavities or spaces to be grouted solid until inspections have approved grout and reinforcement for material properties, size, and installation locations.

B. Field Testing: The Owner shall engage an independent testing agency to perform field quality control tests, as specified in Section 014000 - Quality Requirements. For each type of masonry unit, 5 randomly chosen units shall be sampled for each 5,000 square feet of wall.

1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M requirements.
2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry, of each load-bearing size indicated, in accordance with ASTM C140/C140M requirements.
3. Mortar Tests: Testing agency shall test each type of mortar in accordance with ASTM C780. Mortar shall be tested on each of the first 3 days. Alert testing agency if mortar mix is altered during construction to allow for retesting.
4. Grout Test: Testing agency shall test each type of grout in accordance with ASTM C1019. Grout shall be tested on each of the first 3 days. Alert testing agency if grout mix is altered during construction to allow for retesting.

3.20 REPAIR AND CLEANING

A. Remove masonry units that have become damaged or stained, or that do not display acceptable blend of color and texture matching mockup/sample panel. Remove as whole units, do not cut. Replace with new units with fresh mortar joints.

B. Remove excess mortar and mortar droppings.

C. Replace defective mortar and repoint. Enlarge holes or voids at defective mortar, and remove enough adjacent mortar to allow for repointing. Install fresh mortar joint and match to adjacent work.

D. Where expansion/control joints and sealant joints are indicated, clean joints and leave them clear and ready for installation of joint or sealant materials.

E. Clean concrete masonry in accordance with NCMA TEK 08-04A and clean clay masonry in accordance with BIA Technical Notes No. 20. Use hand cleaning/bucket-and-brush methods.

F. To prevent freezing of cleaners and rinse water, do not clean when masonry surface temperature will drop below 40 degrees F.

G. Test cleaning methods and materials on one half of mockup/sample panel; leave the other half uncleaned. Obtain approval of Architect before cleaning the finished work.

H. Protect adjacent non-masonry surfaces from cleaning materials and processes with temporary sheeting or masking.

I. Provide "in-progress" cleaning; clean masonry in each area as soon as possible after mortar has fully cured (approximately 7 to 28 days; coordinate with manufacturer's recommendations for each mortar type specified). Field test a small area to ensure mortar curing is complete prior to large-scale cleaning.

J. Pre-wet masonry surfaces and clean with specified cleaning solution. Rinse surfaces immediately after cleaning; do not allow cleaning solution to dry or set into the masonry.

K. Use non-metallic tools in cleaning operations.

L. Final Cleaning: As part of Project Closeout (prior to Substantial Completion), provide Final Cleaning of masonry veneer. Remove construction dust with a very low pressure rinse. Perform a visual inspection and spot clean to remove efflorescence, staining, or organic growth, in accordance with recommendations of BIA and NCMA technical notes.

3.21 PROTECTION

A. Provide temporary protective waterproof sheet coverings over tops of walls, parapets, sills, and other horizontal projections as the work progresses, in accordance with FIELD CONDITIONS article in Part 1 above.

B. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

C. Provide protective vertical boards and horizontal sheeting at grade level base of walls to prevent staining or splashing from rain, mud, or mortar droppings.

3.22 MASONRY WASTE

A. Fill Material: Clean masonry waste may be used as fill material. Break up masonry waste into small pieces no greater than 4 inches any direction. Mix with Division 31 engineered fill material so that masonry waste is no more than 33% of the fill (1 part masonry waste, 2 parts engineered fill). Fill containing masonry waste shall be at least 18 inches below grade level.

1. Excess waste shall be removed and disposed of or recycled in accordance with Division 1 waste disposal requirements.

END OF SECTION 042000

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

E. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

F. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

G. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

H. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

I. 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.

J. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification.

K. AWS D1.1/D1.1M - Structural Welding Code - Steel.

L. AWS D1.2/D1.2M - Structural Welding Code - Aluminum.

M. NAAMM MBG 531 - Metal Bar Grating Manual.

N. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.

O. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic).

1.02 SUBMITTALS

A. Product Data: Provide product data for factory fabricated products and accessory materials, including the following:
   1. Nonshrink grout.
   2. Shop primer paint products.
      a. Coordinate with Division 9 Painting topcoat manufacturer and provide compatibility certificates from topcoat manufacturer that shop primers are acceptable substrate for specified topcoats.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Include field measurements, and indicate where field measurements differ from documents.

2. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.

C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

1.03 QUALITY ASSURANCE

A. Design mechanical supports and miscellaneous steel shapes 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. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

C. Field Measurements: Take field measurements prior to fabrication and verify that dimensions and tolerances are acceptable for fabricated products to fit the space. Indicate field measurements on shop drawings.

PART 2 PRODUCTS

2.01 GENERAL

A. Materials, General: Provide metal fabrications and components with finished surfaces that are smooth and flat. Metal fabrications and components shall not have labels, stickers, engraved or rolled manufacturer names, seams, or blemishes that are exposed in the finished work.

2.02 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A500/A500M Grade B cold-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Slotted Channel Fittings: ASTM A1011/A1011M.

F. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.

1. Provide stainless steel fasteners for all exterior construction and for fastening aluminum and stainless steel fabrications.
2. Provide stainless steel fasteners at areas subject to moisture or steam, including mechanical rooms, janitor/custodial rooms with floor sinks, and similar spaces.
3. Provide zinc-plated fasteners for interior construction except where stainless steel is indicated.

G. Bolts, Nuts, and Washers: ASTM A307, Grade A, galvanized to ASTM A153/A153M where connecting galvanized components.

H. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

I. Shop and Touch-Up Primer: SSPC-Paint 15, universal shop primer, complying with VOC limitations of authorities having jurisdiction.

J. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FABRICATED ITEMS

A. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking and masonry; prime paint finish.

B. Lintels: As detailed; prime paint finish.

C. Slotted Channel Framing: Fabricate channels and fittings from ASTM A1011/A1011M, Grade 33 structural steel complying with the referenced standards; with factory-applied, rust-inhibiting thermoset acrylic enamel finish.
   1. Provide 1-5/8 inch by 1-5/8 inch channel unless otherwise indicated.

D. Miscellaneous Steel Shapes: Provide steel shapes for miscellaneous applications indicated on drawings, including but not limited to, reinforcing steel shapes at low partitions/knee walls and concrete slab edge angles.

2.05 FACTORY FABRICATED STAIR NOSINGS

A. Factory Fabricated Stair Nosings: For casting into concrete stairs.
   1. Materials: Extruded aluminum, alloy type 6063-T5, mill finish.
      a. Tread Abrasive Filler: Aluminum-oxide epoxy-bonded to tread base.
      b. Tread Type: Ribbed bar.
      c. Nosing Types: Angled long nose for sloped stairs.
      d. Color: Black.
      e. Depth: 3 inches nominal.
   2. Manufacturers:
      a. Balco, Inc.; R-315PC.
      b. Nystrom, Inc; Ribbed Bar Nosing with EcoTread (STSB-ECO).
      c. Wooster Products, Inc.; Type 231BF.
      d. Substitutions: See Section 016000 - Product Requirements.

2.06 PREFABRICATED ENVELOPE DEPOSITORY / DROP BOX

A. Envelope Depository / Drop Box: Through-wall drop box consisting of 12 inch by 12 inch receiving chest / safe with locking door, angled chute, and with stainless steel hinged lift plate and face plate with hood.
   1. Drop Slot: 6.5 inches wide by 2.25 inches high.
   2. Unit Size: Coordinate wall depth size and height to centerline of drop slot with base cabinet and with storefront manufacturer.
   3. Face and Backer Plate: Provide both exterior face plate and interior side backer plate, with weatherstripping, for fastening to metal infill panel. Coordinate with Division 8 Section "Aluminum-Framed Storefronts" for insulated metal infill panel, and coordinate to ensure rough opening dimension and location are properly sized and located.

4. Vinyl Labeling: Include "Envelope Depository" or similar on face plate, and "Lift to Deposit" on hinged lift plate. Verify with Owner for final message, provide custom message at Owner's preference.

2.07 FINISHES - STEEL

A. Prime paint steel items.
   1. Exceptions: Galvanize and do not prime items to be embedded in concrete and items to be embedded in masonry. Do not prime items to be embedded in sprayed fireproofing.

B. Prepare interior items to be primed in accordance with SSPC-SP3 Power Tool Cleaning.

C. Prepare exterior items to be primed, and interior items to receive specialty protective coating such as zinc-rich primer, in accordance with SSPC-SP 6/NACE No. 3 Commercial Blast Cleaning.

D. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

E. Prime Painting: One coat.

F. Galvanizing: Galvanize after fabrication to ASTM A123/A123M requirements.

G. Slotted Channel Framing: ASTM A1011/A1011M Grade 33; coated with manufacturer's standard rust-inhibitive acrylic enamel.

2.08 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

F. Installation of Nosings: Center nosings on stair width with 4 inch inset at each end. Embed nosings in wet concrete, flush to top of each tread and aligned to front edge of each riser. Coordinate with concrete installer to tool concrete around the nosings for a smooth, clean finish. Remove protective masking tape after concrete has set and cured and clean any concrete residue.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055000

SECTION 055213
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

D. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).

E. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.

F. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

G. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification.

H. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.

1.02 SUBMITTALS

A. Product Data: Provide manufacturer's product data for pipe and tube railings.

B. Sustainability Submittals: Refer to Division 1 Section "Sustainable Design Requirements."

C. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
2. Design Data: Include delegated-design shop drawings, including structural calculations and details for loadings and stresses, and anchors and connections.
3. Include the design engineer's seal and signature on each sheet of shop drawings.

D. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated within the previous 12 months.

E. Designer's Qualification Statement.

1.03 QUALITY ASSURANCE

A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.

B. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months.

C. Indoor Emissions: For each type of paint and coating, comply with the emissions requirements of California Department of Public Health (CDPH); "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers."

D. VOC Content: For each type of paint and coating, comply with VOC content restrictions as required by 40 CFR 59, Subpart D (EPA's "National Volatile Organic Compound Emission Standards for Architectural Coatings").

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

D. Allow for expansion and contraction of members and building movement without damage to connections or members.

E. Dimensions: See drawings for configurations and heights.

F. Provide brackets, flanges, anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.

1. For anchorage to concrete or solid masonry, provide brackets anchored with drilled in expansion shields and hanger or lag bolts.
2. For anchorage to hollow masonry, provide brackets anchored with toggle bolts.
3. For anchorage to stud walls, provide brackets anchored with hanger or lag bolts to fire-retardant-treated wood blocking, or with toggle bolts to steel reinforcing backing plates.
    a. Coordinate anchorage locations with Division 6 "Rough Carpentry" and / or Division 9 "Cold-Formed Steel Framing - Non-Structural (CFSF-NS)" to provide blocking or backing plates in framed walls, as applicable.

G. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.02 STEEL RAILING SYSTEM

A. Steel Tube: ASTM A500/A500M Grade B cold-formed structural tubing.

B. Steel Pipe: ASTM A53/A53M Grade B Schedule 40; unless otherwise required due to structural loading/design.

1. Provide galvanized pipe at exterior locations, and where indicated.

C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

D. Exposed Fasteners: No exposed bolts or screws.

E. Galvanizing: In accordance with requirements of ASTM A123/A123M.

F. Shop and Touch-Up Primer: SSPC-Paint 15 or MPI #79, compatible with topcoat indicated in Division 9 Section "Painting," complying with VOC limitations of authorities having jurisdiction.

1. At exterior and galvanized surfaces, provide zinc-rich primer; SSPC-Paint 20 or MPI #20, compatible with topcoat, and VOC-compliant.

G. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Grout: Comply with ASTM C1107/C1107M.

2.03 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:
   1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
   2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
   3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Anchor railings securely to structure.

D. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055213

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

C. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.

D. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

E. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

G. AWPA U1 - Use Category System: User Specification for Treated Wood.

H. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

I. EPA (TSCA); Title VI - Toxic Substances Control Act, Title VI: Formaldehyde Standards for Composite Wood Products.

J. PS 1 - Structural Plywood.

K. PS 20 - American Softwood Lumber Standard.

L. SCAQMD 1168 - Adhesive and Sealant Applications.

1.02 SUBMITTALS

A. Product Data: Provide technical data for fire-retardant materials, wood preservative materials, and include certification that materials and treatment comply with manufacturer's requirements.

1. Evaluation Reports: Provide ICC-ES evaluation reports for each applicable item below:
    a. Preservative-treated lumber.
    b. Fire-retardant-treated lumber.
    c. Each type of engineered wood.
    d. Shear panels.
    e. Each type of power- or powder-actuated fastener and expansion anchor.
    f. Structural wood connectors (framing anchors).

1.03 QUALITY ASSURANCE

A. Testing Agency Qualifications (for Fire-Retardant Treatments): Independent firm specializing in performing testing of treatments of type specified in this section, and performing periodic inspections to ensure that the material receiving the classification marking matches the tested material; and approved by local authority having jurisdiction.

1.04 DELIVERY, STORAGE, AND HANDLING

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

B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. Grading Agencies: 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.
      a. Northeastern Lumber Manufacturer's Association (NELMA) - Spruce-Pine-Fir.
      b. Southern Pine Inspection Bureau (SPIB) - Southern Pine.
      c. West Coast Lumber Inspection Bureau (WCLIB) - Douglas Fir, Hem Fir, Spruce-Pine-Fir-South.
      d. Western Wood Products Association (WWPA) - Douglas Fir, Hem Fir; Spruce-Pine-Fir-South.
      e. National Lumber Grades Authority (NLGA) - Douglas Fir-North, Hem Fir-North, Spruce-Pine-Fir.
   2. Provide lumber stamped with grade mark of responsible grading agency, unless otherwise indicated.
      a. Place grade stamp on unexposed surface of lumber specified to be exposed with natural or stained finish, or omit grade stamp and submit documentation from grading agency certifying grade compliance.
   3. Species and Grade:
      a. Species and grade is indicated on Structural Drawings for studs, joists, rafters, beams, columns, ceiling joists, and other structural components, as applicable.
      b. For miscellaneous lumber including non-structural miscellaneous framing, blocking, nailers, grounds, and furring, provide No. 2 or Standard grade.
      c. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
   4. Moisture Content: S-dry or MC19 (19% or less). Applies to lumber for 2-inch nominal thickness and less.

B. Composite Wood: Any composite wood materials installed inside the weatherproofing system shall meet either EPA (TSCA); Title VI for ultra-low-emitting formaldehyde or no added formaldehyde (ULEF / NAUF).

2.02 WOOD CONSTRUCTION PANELS

A. Roof Sheathing (Parapet): Exposure 1, veneer faced FRT plywood sheathing. OSB is not acceptable.
   1. Thickness: Minimum 5/8 inch.
   2. Screws for fastening plywood sheathing over rigid insulation at parapets:
      a. For Steel Framing: Provide #10 SIP low profile flat head or pancake head screws intended for wood-to-metal connections, at spacing indicated.
         1) Pullout Capacity: 108 lb minimum in 43 mil (18 gauge) steel.

b. For Masonry Backup: 1/4-inch diameter, low-profile flat head type concrete screw anchors at 3 inches from each panel edge, and at spacing indicated. Length to suit embedment into CMU of 1-1/4 inches, minimum.
   1) Pullout Capacity: 100 lb minimum at 1 inch embedment in face shell of hollow CMU.

B. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, 1/2 inch, unless otherwise indicated.
   1. Type X Sheathing: At all fire-rated assemblies and at all locations where 5/8-inch thick sheathing is indicated on Drawings, provide 5/8-inch thick product with Type X core. For rated assemblies, product shall be one of those required by indicated tested assembly.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. Edges: Square.
   4. Products:
      a. CertainTeed Corporation; GlasRoc Brand.
      b. Georgia-Pacific Gypsum; DensGlass Sheathing.
      c. National Gypsum Company; Gold Bond eXP Sheathing.
      d. USG Corporation; Securock Brand Glass-Mat Sheathing.
      e. Substitutions: See Section 016000 - Product Requirements.

C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 25 or less, when tested in accordance with ASTM E84 (Class A - UL FR-S).

2.03 ACOUSTIC SUBFLOORING ASSEMBLY

A. Cellulose Based Fiber Board Subflooring: ASTM C 209 sound-deadening board composed of recycled paper and wood fibers in a binding medium. Provide 5/8-inch thick units unless indicated otherwise.
   1. Density: Not less than 26 pcf per ASTM C 209.
   2. Tensile Strength: Not less than 450 psi per ASTM C 209.
   3. Hardness: 230 lbs when tested in accordance with ASTM D1037.
   4. Water Absorption by Volume: 5% maximum in a 2-hour immersion.
   5. Expansion Due to Humidity: 0.25% at 50 to 90% relative humidity per ASTM C 209
   6. NRC: 0.20.
   7. Flame Spread and Smoke Developed: 200 and 400 (Class C) per ASTM E 84.

B. Acoustic Underlayment: Acoustic underlayment material designed to acoustically decouple flooring from subflooring.
   1. Products:
      a. Acoustical Surfaces, Inc.; Acoustik.
      b. All Noise Control; Footfall.
      c. KN Rubber; QuietDown.
      d. Sound Seal; ProBase Rubber.
   2. Material: Acoustic recycled rubber sheet.
   3. Thickness: 1/4 inch (6 mm), minimum.
   4. Flame Spread and Smoke Developed: Maximum 84 and 400, per ASTM E 84.
   5. Method of Installation: Adhesive; as recommended by manufacturer.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Provide hot-dipped galvanized steel complying with ASTM A 153 or stainless steel at exterior, high humidity, and preservative-treated wood locations.
      a. Fasteners at interior FRT shall be per FRT treatment manufacturer's recommendations.
   2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
   3. Anchors: Toggle bolt type for anchorage to hollow masonry.
   4. Screws/Anchors for Fastening Top-of-Parapet Blocking & Nailers and for Back-of-Parapet Plywood Sheathing over Rigid Insulation:
      a. For CFSF-S Metal Framed Parapets: Provide #10 SIP low profile flat head screws intended for wood-to-metal connections, at spacing indicated. Pullout capacity of 108 lb minimum in 43 mil (18 gauge) steel.
      b. For CMU Parapets: Provide 1/4-inch diameter low-profile flat head type concrete screw anchors, at spacing indicated. Length to suit embedment into CMU of 1-1/4 inches minimum. Pullout capacity of 100 lb minimum at 1 inch embedment in face shell of hollow CMU.

B. Flexible Flashing/Separation Material: Barrier sheet fabricated of polyethylene backed rubberized asphalt or butyl rubber sheet; not less than 25 mil overall thickness.

C. General Purpose Construction Adhesives: Comply with ASTM C557 or ASTM D3498.
   1. Adhesives: Adhesives field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Provide FRT lumber and plywood stamped with name and mark of qualified testing agency, fire-retardant treatment product and manufacturer, wood species and drying method, testing standards, and flame spread and smoke development indices.
      a. For exterior FRT and FRT that will be exposed to moisture, include accelerated weathering test language, with the words "No increase in the listed classification when subjected to Standard Rain Test ASTM D2898".
   2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
   1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 and maximum smoke developed index of 450, when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.

b. Treat exterior rough carpentry items associated with roof construction, concealed blocking, and as indicated on Drawings.
c. Do not use treated wood in direct contact with the ground.

2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 and maximum smoke developed index of 450, when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
   a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
   b. Treat interior concealed blocking, plywood backing panels, and other rough carpentry items as indicated.
   c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
3. Strength Adjustments (Structural Panels/Plywood): Test FRT structural panels/plywood per ASTM D 5516 and develop strength adjustment factors per ASTM D 6305.
4. Strength Adjustments (Lumber): Test FRT lumber per ASTM D 5664 and develop strength adjustment factors per ASTM D 6841.

C. Preservative Treatment:
1. Restrictions: Do not use lumber or plywood treated with chromated copper arsenate (CCA). Do not use lumber or plywood treated with inorganic boron (SBX) for applications exposed to water, ground/soil contact, or interior floor slabs/concrete. Comply with additional treatment restrictions as required by local authorities having jurisdiction.
2. Preservative Pressure Treatment of Lumber & Plywood Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
   a. Use Category UC2 is acceptable for interior lumber and plywood above grade (not in contact with floor slab).
   b. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
   c. Treat lumber exposed to weather.
   d. Treat lumber in contact with roofing, flashing, or waterproofing.
   e. Treat lumber in contact with masonry or concrete.
   f. Treat lumber less than 18 inches above grade, and lumber located directly against below-grade exterior walls.
   g. Treat lumber in other locations as indicated.
3. Preservative Pressure Treatment of Lumber in Contact with Ground/Soil: AWPA U1, Use Category UC4A, Commodity Specification A using waterborne preservative.
   a. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush-application in the field.

PART 3 EXECUTION

3.01 PREPARATION

A. 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 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 metal-framed walls, provide continuous FRT blocking around door and window openings for anchorage of frames, securely attached to stud framing.

C. In metal-framed 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 PPT blocking is indicated to be installed directly adjacent to metal decking or other galvanized metals, provide flexible flashing/separation material as a continuous barrier to prevent direct contact between materials.

3.04 ROOF-RELATED CARPENTRY

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

B. Top-of-Parapet Blocking and Nailers: Secure wood blocking and plywood nailers to prepared substrate using mechanical fasteners to attain loading design requirements. Adhesive anchorage of wood nailers & blocking is not acceptable. Coordinate with installation of continuous insulation and air barrier membrane/roof membrane materials.

1. Installation at CMU Parapets: Secure parapet blocking and nailers to CMU with screw anchors in two rows, staggered, at 32 inches on center; except within 10 feet of building corners provide two staggered rows at 24 inches on center. Provide fasteners sized for embedment length into CMU of 1-1/4 inch, minimum. Install screws in accordance with manufacturer's instructions, with screw heads flush with uppermost surface off indicated blocking or plywood nailer.
2. Installation at CFSF-S Metal Framed Parapets: Secure blocking and nailers to metal framing at #10 SIP screws in 2 rows at 16 inches on center; except within 10 feet of building corners provide 2 rows at 12 inches on center. Provide attachment in accordance with APA Form No. T625C, Table 1; for 3/4 inch plywood thickness, wall stud spacing, and wind exposure category indicated.

C. Back-of-Parapet Sheathing Over Rigid Insulation: Secure plywood sheathing over XPS / XEPS insulation to prepared substrate using mechanical fasteners to attain loading design requirements. Adhesive anchorage is not acceptable. Coordinate with installation of continuous insulation and air barrier membrane/roof membrane materials.

1. Stagger vertical butt joints of plywood sheathing.
2. Installation at CMU Parapets: Secure sheathing over board insulation with screw anchors, embedment length of at least 1-1/4 inches into CMU substrate. Fastener spacing shall be 16 inches horizontally and 8 inches vertically.
3. Installation at CFSF-S Metal Framed Parapets: Secure sheathing over board insulation anchored directly to CFSF-S framing with #10 SIP screws. Fastener spacing shall be 16 inches horizontally and 8 inches vertically; verify with spacing of installed CFSF locations in field.

3.05 INSTALLATION OF CONSTRUCTION PANELS

A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using screws as indicated.
   1. Screw panels to cold-formed steel framing.
   2. Space panels 1/8-inch apart.

B. Communications and Electrical Room Mounting Boards: Secure with screws, to furring or to framing as applicable, with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and 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.

3.06 CLEANING

A. Waste Disposal: Refer to Section 017419 - Construction Waste Management and Disposal.
   1. Comply with applicable regulations.
   2. Do not burn scrap on project site.
   3. Do not burn scraps that have been pressure treated.
   4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

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

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

END OF SECTION 061000

SECTION 064100
ARCHITECTURAL WOODWORK AND CASEWORK

PART 1 GENERAL

1.01 DEFINITIONS

A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.

B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.

C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.

1.02 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard.

B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications.

C. ANSI A208.1 - American National Standard for Particleboard.

D. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications.

E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

G. AWI (QCP) - Quality Certification Program.

H. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition.

I. BHMA A156.9 - Cabinet Hardware.

J. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

K. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board.

L. EPA (TSCA); Title VI - Toxic Substances Control Act, Title VI: Formaldehyde Standards for Composite Wood Products.

M. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.

N. ISFA 2-01 - Classification and Standards for Solid Surfacing Material.

O. NEMA LD 3 - High-Pressure Decorative Laminates.

P. SCAQMD 1113 - Architectural Coatings.

Q. SCAQMD 1168 - Adhesive and Sealant Applications.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

1.04 SUBMITTALS

A. Product Data: Component dimensions, configurations, construction details, joint details, attachments.
   1. Include product data for each type of hardware and accessory.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Include field measurements, and indicate where field measurements differ from documents.

C. Selection Samples: Submit manufacturer's color charts indicating full range of available colors, for each product requiring color selection.

D. Verification Samples: Submit physical samples, manufacturer's standard size, for each specified finish and color of the following materials:
   1. For each type of architectural woodwork profile and paneling, minimum 8 inches square or 8 linear inches in length, illustrating proposed shapes, sizes, and finishes of panels, moldings, and other profiles
   2. For each solid wood or wood veneered product indicated to receive transparent finish, provide at least three samples illustrating standard range of wood grain, stain color, and sheen, for selected color.
   3. Plastic laminate.
   4. Solid surface.
   5. PVC edge banding.

E. Fabricator Qualifications: Include evidence of accreditation with quality control program.

F. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with experience on Projects of similar size and scope.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
   2. Single Source Responsibility: Provide and install this work from single fabricator.
      a. It is acceptable to subcontract portions of the work to a separate specialty subcontractor (for example, pre-fabricated plastic-laminate-faced casework); however, each fabricator shall be independently accredited; submit accreditation for each fabricator. The primary woodwork contractor shall be responsible for ensuring the work of all Division 06 sections is well coordinated and properly fabricated and installed.

B. Quality Certification:
   1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: www.awiqcp.org/#sle.
      a. This AWI (QCP) project is registered as project number _____.
   2. Provide for third-party AWI final inspection of fabricated architectural casework (prior to delivery). AWI program of self-certification in lieu of third-party inspection is not acceptable.
   3. Provide for third-party AWI final inspection of field-installed woodwork (after installation). AWI program of self-certification in lieu of third-party inspection is not acceptable.

4. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) requirements for grade or grades specified.
5. Provide designated labels on shop drawings as required by certification program.
6. Provide designated labels on installed products as required by certification program.
7. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
8. Replace, repair, or rework all work for which certification is refused.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 2 of the Architectural Woodwork Standards: "Care & Storage."

B. Deliver woodwork after finishes are complete, including painting, and HVAC is operating at occupancy conditions in all spaces where woodwork will be installed.

C. Store in an environmentally controlled location. Protect units from moisture damage.

1.07 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.

B. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84, unless otherwise indicated for specific products.

C. All countertop surfaces shall be NSF approved for food contact.

D. Accessibility Requirements: Fabricate and install woodwork and casework in compliance with ICC/ANSI A117.1 and with ADA Standards for Accessible Design.

E. Low-Emitting Materials:
   1. Composite Wood: Any composite wood materials installed inside the weatherproofing system shall meet either EPA (TSCA); Title VI for ultra-low-emitting formaldehyde or no added formaldehyde (ULEF / NAUF).
   2. Paints and Coatings: Paints and coatings field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet applicable VOC limits of CARB (SCM) or SCAQMD 1113.
   3. Adhesives and Sealants: Adhesives and sealants field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.02 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.

B. Plastic-Laminate-Clad Cabinets: Custom grade, except as modified below. Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.

1. Style: Reveal overlay. Ease doors and drawer fronts slightly at edges.
2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
   a. Base Cabinets: 24 inches.
   b. Tall Cabinets: 24 inches.
   c. Wall Cabinets: 12-1/2 inches. (Minimum clear interior depth shall be 11 inches)
3. Drawer Construction: Provide AWI premium grade for drawer box construction.
4. Base Construction: Provide adjustable levelers for all base cabinets to facilitate load transfer to the floor, isolate cabinet ends from the floor, and permit leveling.
   a. Provide one of the following two types of base construction:
      1) Separate Sub-Base: Cabinet sub-base shall be separate and continuous (no cabinet body sides-to-floor), exterior grade plywood with concealed fastening to cabinet bottom. Sub-base shall be ladder-type construction of individual front, back, and intermediates, to form a secure and level platform to which cabinets attach. Recess sub-base at exposed cabinet end panels 1/4 inch from face of finished end, for flush installation of finished base material by other trades.
      2) Integral Base: Provide end panels, cabinet bottoms, and horizontal toe kick members integrally joined together for structural strength. Adjustable levelers shall be provided at each corner for each cabinet.
   b. Toe Kick: Toe kick shall be nominal 4 inch height. Reduce as necessary via field modification due to construction tolerances and concrete slab levelness to maintain maximum height dimensions indicated.
5. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
   a. Finish: Matte or suede, gloss rating of 5 to 20.
   b. Surface Color and Pattern: To be selected by Architect from manufacturer's full range.
   c. Exposed Interior and Semi-Exposed Surfaces: Provide HPDL, type VGS or CLS, at semi-exposed interiors of cabinets (cabinets with doors) and drawer boxes. Provide type VGS for exposed interior horizontal shelving surfaces and interiors of open cabinets (no doors).
   d. Apply undecorated laminate backing sheet to concealed reverse side of plastic laminate finished surfaces.
   e. Wood Grain Pattern: If wood grain is indicated or selected for plastic laminate color/pattern, provide sequence matched finish across each elevation. Grain shall run vertically across all doors, drawers, fronts, and false fronts; mismatched grain direction is not allowed.

C. ADA Sink Panels: Fabricate a panel of 3/4-inch moisture resistant core material and veneer/cladding material to match adjacent cabinets. Panel shall be removable for service access to undercounter plumbing. Provide with Z-clip attachment system for concealed fastening and with a steel cable retainer, minimum 3 feet long, so that panel can be set aside for service access. Fasten Z-clips and steel cable retainer to panel and to substrate with tamper-resistant fasteners.
   1. Provide an undercounter vertical "apron" piece at front of ADA sink locations as indicated, flush to fronts of adjacent cabinets and finished to match.

2.03 WOOD-BASED COMPONENTS

A. Low-Emitting Materials: Provide composite wood products that meet the requirements of EPA (TSCA); Title VI for formaldehyde emissions.

B. Core Material for Cabinets: ANSI A208.1, Grade M-2 particleboard.
   1. At Contractor's option, cabinet backs may be fabricated of ANSI A208.2, Grade MD fiberboard.

C. Core Material for Countertops: Manufacturer's standard ANSI A208.1, Grade M-2 particleboard, or ANSI A208.2, Grade MD fiberboard.
   1. At countertops containing sinks, provide core material meeting ANSI MR10 for moisture resistance. Available Products:
      a. Arauco North America; Duraflake VESTA Moisture Resistant ULEF.
      b. Collins Pine; FreeForm.
      c. Georgia-Pacific; Ultrastock MR MDF.
      d. Roseburg Forest Products; SkyBlend MR-10.

2.04 PANEL CORE MATERIALS

A. Particleboard: Composite panel composed of cellulosic particles, additives, and bonding system; comply with ANSI A208.1.

B. Medium Density Fiberboard (MDF): Composite panel composed of cellulosic fibers, additives, and bonding system; cured under heat and pressure; comply with ANSI A208.2.

2.05 THERMALLY FUSED LAMINATE PANELS

A. Thermally Fused Laminate (TFL): Melamine- or polyester-resin-saturated decorative papers; for fusion to composite wood substrates under heat and pressure.
   1. Test in accordance with NEMA LD 3 Section 3.
   2. Panel Core Substrate: Particleboard.
   3. Color: White.

2.06 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation; High Pressure Laminate.
   2. Panolam Industries International, Inc; Nevamar Standard HPL.
   3. Panolam Industries International, Inc; Pionite Standard HPL.
   4. Wilsonart LLC; High Pressure Laminate (HPL).

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

C. Color and Pattern: To be selected by Architect from Manufacturer's full range (standard and premium colors) in standard textured finish (textured gloss, fine textured, or suede finish). High gloss, heavy textured, metallic, or other special surface products (abrasion-resistant, chemical-resistant) will not be required for use in this project.

D. Provide specific types as follows:
   1. Horizontal Countertop Surfaces: HGS, 0.048 inch (1.2 mm) nominal thickness.
   2. Vertical Surfaces and Non-Countertop Horizontal Surfaces: VGS, 0.028 inch (0.7 mm) nominal thickness.
   3. Cabinet Liner: CLS, 0.020 inch (0.5 mm) nominal thickness.
   4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.07 SOLID SURFACING MATERIAL

A. Solid Surfacing Material: ISFA 2-01.
   1. Products:
      a. Avonite Surfaces, a Brand of Aristech Surfaces, LLC; Avonite.
      b. E. I. du Pont de Nemours and Company; Corian.
      c. Formica Group; Solid Surfacing.
      d. Hanwha L&C; Hanex.
      e. LG Hausys America; HI-MACS.
      f. Lotte Advanced Materials Co. Ltd.; Staron.
      g. Meganite, Inc; Meganite Acrylic Solid Surface.
      h. US Surface Warehouse; LivingStone.
      i. Wilsonart LLC; Solid Surface.
   2. Thickness: 1/2-inch.
   3. Type: Standard Type.
   4. Color and Pattern: To be selected by Architect from manufacturer's full range.
   5. Color and Pattern: Provide colors per the following:
      a. Colors and Patterns for Countertops: As selected by Architect from manufacturer's full range of colors equivalent to Dupont Corian price group 4.

2.08 COUNTERTOPS

A. Fabricate in accordance with AWI/AWMAC/WI (AWS), Section 11 - Countertops, Custom Grade and with manufacturer's requirements.

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.
   2. Core: Particleboard or fiberboard as specified, except provide moisture resistant type at sink locations. Build up core material for total countertop thickness indicated.
   3. Exposed Edge Treatment: Square, substrate built up to 1-1/2 inch thick unless otherwise indicated; covered with 3 mm edge banding with eased ends.
   4. Back and End Splashes: 3/4-inch thick core material with Grade HGS face and 0.5 mm edge banding/tape at edges.

C. Solid Surfacing Countertops and Window Stools: Solid surfacing sheet or plastic resin casting over structural substrate/core material.
   1. 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.
   2. Core: Fabricate solid surface countertop core of manufacturer's recommended moisture-resistant MDF. Provide continuous structural substrate at unsupported/overhang conditions; ladder construction acceptable over cabinets. Build up core material for total countertop thickness indicated.
   3. Fabricate in accordance with manufacturer's standard requirements, and in one piece to the greatest extent possible.
      a. Shop-fabricate cutouts and holes in solid surface for plumbing fixtures, deck-mounted soap dispensers, and other items indicated on Drawings.

4. Provide manufacturer's standard configuration for exposed edges, back and end splashes, and per the requirements below:
    a. Edge and Corner Profiles: Eased.
    b. Provide built up edges to standard thickness indicated (1-1/2 inches unless otherwise indicated).
    c. Provide 4 inch high back and end splashes, unless otherwise indicated.
5. Window Stools: Scribe window stools to fit jamb conditions as indicated.

2.09 ACCESSORIES & ACCESSORY MATERIALS

A. Adhesive: Type recommended by fabricator to suit application.

B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; of width to match component thickness.
    1. Provide 3 mm edge banding at all door and drawer front edges and laminate countertop edges.
    2. Provide 0.5 mm edge banding (tape) at cabinet body edges, shelf edges, and other semi-exposed/exposed interior edges.
    3. Color: To be selected by Architect from Manufacturer's full range.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

D. Concealed Joint Fasteners: Threaded steel.

E. Casters: Provide swivel type, zinc-plated steel casters unless otherwise indicated. All casters shall include sealed bearings and non-marking, radiused, polyurethane or rubber treads. Do not provide brakes unless specifically indicated; where brakes are indicated or where casters are indicated to be "locking" type, provide brake type that locks both swivel and wheel.
    1. Standard Duty Casters: Wheels with nominal 3-inch diameter, by 1- to 1-1/4-inch width; with a minimum load rating of 150 lbs per caster.
    2. Manufacturers:
        a. Caster City.
        b. Hamilton Caster & Mfg.
        c. R & K Industrial Wheels.

F. Grommets: Standard plastic grommets for countertop cut-outs, in black color unless otherwise indicated.
    1. Grommet Size: To fit 2-1/2 inch diameter cut-out, nominal, unless otherwise indicated.
    2. Grommets shall have removable caps and slot for wire passage.

G. Trash/Recycle Bin Grommets: Stainless steel grommets for circular countertop cut-outs; satin finish.
    1. Grommet Size: Unless otherwise indicated, provide 12-inch diameter, by 3-inch depth. Basis-of-Design is Doug Mockett TM12B-SSS.

H. Undercounter Wire Management: Provide the following, as indicated:
    1. Vinyl J-shaped channel wire manager for undercounter mounting, continuous for full length of countertop.

2.10 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated shelf rests, polished chrome finish, for nominal 1 inch spacing adjustments.

C. Workstation Brackets: Fixed, L-shaped, corner reinforced, face-of-stud mounting. Provide at all countertop/worksurface that is unsupported by cabinetry at 16 inches o.c., unless otherwise indicated.
   1. Materials: Formed steel shapes.
      a. Finish: Manufacturer's standard, factory-applied, textured powder coat.
      b. Color: To be selected by Architect from manufacturer's full range.
   2. Load Capacity: 1000 lbs minimum per pair of brackets, tested at 16 inches o.c. spacing.
   3. Size: Provide nominal sizes below. Provide additional sizes as required for other countertop/workstation applications indicated on Drawings.
      a. Provide 21 inches high by 28 inches deep for standard 30 inch deep countertops.
      b. Provide 21 inches high by 21 inches deep for standard 25 inch deep countertops.
   4. Products:
      a. A&M Hardware, Inc; Standard Brackets.
      b. Best Brackets; ADA Workstation Support Standard Steel Bracket.
      c. FastCap; SpeedBrace.
      d. Lyman Associates; Counter Top Supports.
      e. Substitutions: See Section 016000 - Product Requirements.

D. Drawer and Door Pulls: BHMA A156.9, B02011, back-mounted "U" shaped wire pull, steel with chrome finish, 4 inch centers.

E. Cabinet and Drawer Locks: Keyed cylinder, two keys per lock, master keyed, steel with chrome finish. Provide on all cabinet doors and drawers unless otherwise indicated.

F. Drawer Slides:
   1. Type: Full extension.
   2. Static Load Capacity: Heavy Duty grade.
      a. For standard box drawers under 30 inches wide, provide BHMA Grade 1HD-100 with minimum load capacity of 100 lbf.
      b. For file drawers and drawers 30 inches wide or larger, provide BHMA Grade 2HD-200 with minimum load capacity of 200 lbf.
      c. For pencil drawer slides, provide 3/4 extension with minimum load capacity of 45 lbf.
   3. Mounting: Side mounted.
   4. Stops: Integral type.
   5. Features: Provide soft close type.
   6. Manufacturers:
      a. Accuride International, Inc.
      b. Fulterer USA.
      c. Grass America Inc.
      d. Knape & Vogt Manufacturing Company.

G. Filing Cabinet Suspension System: Provide 14-gauge steel file suspension rails, epoxy powder coated. File followers, or other split bottom hardware, are not acceptable.

H. Waste/Recycle Bin Slides: Heavy-duty, ball-bearing type slides that bottom mount to inside of cabinet, with integral wire system to hold bins in place. Provide specific model for cabinet width indicated.

1. Static Load Capacity: Minimum 100 lbs.
2. Features: Provide with integral stops and soft-close operation.
3. Products:
   a. Fulterer USA; FR 3607/3608.
   b. Knape & Vogt; SBM/PSW Series.
   c. Hafele; Waste Bin Pull Out.

I. Hinges: Butt type, BHMA A156.9, Grade 1, 2-3/4 inch, 5-knuckle steel with nickel-plated finish. Provide with antifriction bearings and rounded hospital tips.
   1. Provide two hinges for doors less than 48 inches high, and three hinges for doors more than 48 inches high.

J. Hinges: European style concealed type, BHMA A156.9, B01602, steel with nickel-plated finish.
   1. Provide minimum 110 degree opening standard, and 160 degree opening at ADA sink base cabinets.

K. Keyboard Tray: Integral ball-bearing slides; adjustable tilt, palm rest, cable management, and mouse pad.
   1. Manufacturers:
      a. Accuride International, Inc; CBERGO-Tray 200.
      b. Doug Mockett; #KP7 / M2-90.
      c. Fulterer; #FR 1602.
      d. Knape & Vogt; # KD-110.
      e. WorkRite Ergonomics; Banana Board.
      f. Substitutions: See Section 016000 - Product Requirements.

2.11 MISCELLANEOUS INTERIOR WOODWORK / CARPENTRY ITEMS

A. Wood Veneered Panels: Fabricated flat panels complying with HPVA HP-1, with hardwood plywood core of species compatible with indicated veneer.
   1. Panel Thickness: 3/4 inch.
   2. Veneer Species and Cut: White maple, plain sliced, book-matched, and architectural end match. Veneers on each panel shall be balance matched for consistent width.
      a. Veneer shall be selected such that all veneers within each space shall be well matched for grain and color.
   3. Exposed ends and edges shall match faces.
   4. Outside corners shall be mitered and splined.
   5. Reveals: Unless decorative metal reveals are indicated, provide black painted substrate prior to installation of panels.
   6. Metal Reveals: Decorative millwork trim; 1/2-inch wide by depth matching wood panels (3/4-inch standard), straight edge reveal without front flanges; fabricated of ASTM B221 extruded aluminum, 6063-T5 alloy. Finish shall be selected from manufacturer's full range of anodized and powder coated finishes.
      a. Manufacturers:
         1) Basis-of-Design: Fry Reglet; Model MWR7550.
         2) Flannery, Inc.
         3) Gordon, Inc.
         4) Pittcon Industries.
         5) Tamlyn.

2.12 FABRICATION

A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
   1. Fittings and Fixture Locations: Cut and drill components for fittings and fixtures.
   2. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.
   3. Seal or prime paint concealed cut edges of wood and laminate casework.

D. Hardware Application: Factory-machine casework members for hardware that is not surface applied.

E. Apron Frames: Construction similar to other cabinets, with modifications.
   1. Frames fabricated from panels standard with the manufacturer. Include front and back panels, with drawer suspension framing mechanically fastened to support channels spanning between them.

F. 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 exposed edges.

G. Solid Surfacing: Fabricate in one piece to greatest extent possible; join pieces with adhesive sealant and finish joints smooth in accordance with manufacturer's recommendations and instructions.
   1. Fabricate with butt-jointed / square edge at all solid surface corners. Mitered solid surface corners are not acceptable.

H. Countertop Fabrication: Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall, or as indicated.
   2. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

I. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
   1. Height: 4 inches, unless otherwise indicated.
   2. Mechanically fasten back and end splashes to countertops with steel brackets at 16 inches on center.

J. Wall-Mounted Counters (not mounted over cabinets): Provide ADA compliant knee space with brackets, skirts, or aprons, as indicated on Drawings.

2.13 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.

C. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:

1. Transparent:
    a. System - 3, Lacquer, Postcatalyzed OR System - 5, Varnish, Conversion.
    b. Stain: As selected by Architect.
    c. Sheen: Satin.

PART 3 EXECUTION

3.01 EXAMINATION

A. Site Verification of Environmental Conditions:
    1. Do not deliver woodwork or casework until the following conditions have been met:
        a. Building has been enclosed (windows and doors sealed and weather-tight).
        b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
        c. Ceiling, overhead ductwork, piping, and lighting have been installed.
        d. Installation areas do not require further “wet work” construction.

B. For Base Cabinets Installation: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 1/2 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point, and provide field modifications as required to not exceed maximum height dimensions.
    1. Construction tolerances shall not apply to casework maximum height dimensions; maximum indicated dimension shall be maintained at any point along the length of casework, regardless of floor levelness.
    2. Field modifications shall be made to the toe kick to account for leveling due to floor levelness.

C. For Wall Cabinets Installation: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
    1. Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inchper story.
    2. Maximum Variation of finished gypsum board surface from true flatness: 1/8 inch in 10 feet in any direction.

D. Verify adequacy of backing and support framing.

E. 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) requirements for grade(s) indicated and in accordance with manufacturer's instructions.

B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

C. Use fixture attachments in concealed locations for wall mounted components.

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. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
    1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.

2. Variation of Bottoms of Wall Cabinets from Level: 1/8 inch in 10 feet.
3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.

G. Secure wall cabinets at top and bottom, at each end and no more than 16 inches on center. Secure directly into metal wall framing, or into FRT wood or metal channel blocking with No. 10 wafer head screws. Wall mounted hanger strips are not acceptable.

H. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.

I. 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. Test installed work for rigidity and ability to support loads.

B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

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

3.05 PROTECTION

A. Do not permit finished casework to be exposed to continued construction activity.

B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.

C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION 064100

SECTION 072700
AIR BARRIERS

PART 1 GENERAL

1.01 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.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials.

E. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at the Project site; at minimum one week prior to commencing work of this section.

1. Review required surface/substrate conditions and preparations, field conditions for application and curing/drying time, special installation details and procedures, inspection, and protection and repair.

1.03 SUBMITTALS

A. Product Data: Provide data on material characteristics, performance criteria, and limitations. Provide separate product data for manufacturer's low-temperature product if application temperature is expected to be below 40 deg F.

1. Provide product data on transition membranes, including reports indicating compatibility with primary air barrier material(s).

B. Shop Drawings: Provide project-specific drawings of location and extent of air barrier assemblies. Details shall include methods for maintaining air barrier continuity.

1. Provide termination, transition, and joint details. Include specific details for the following:
   a. Bridging of gaps in construction.
   b. Inside and outside corners.
   c. Sealing around penetrations at pipes, conduits, and boxes.
   d. Continuity of air barrier at flashings, ledge and shelf angles, and similar interruptions.

C. Compatibility Data: Provide manufacturer's data indicating compatibility between submitted primary air barrier material and transition membrane products.

D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.

E. Manufacturer's Installation Instructions: Indicate substrate evaluation and preparation, installation methods, and storage and handling criteria.

F. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification; keep copies of each contractor accreditation and installer certification on site during and after installation, and present on-site documentation upon request.

1.04 QUALITY ASSURANCE

A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP):
   1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.

B. Air Barrier Association of America (ABAA) Evaluated Air Barrier Assemblies: 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.

1.05 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.01 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR IMPERMEABLE)

A. Air and Vapor Barrier, Fluid-Applied:
   1. Material: Synthetic acrylic coating.
   2. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
   3. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
   4. Water Penetration Resistance Around Nails: Pass, when tested in accordance with ASTM D1970/D1970M.
   5. Ultraviolet (UV) and Weathering Resistance: Approved in writing by manufacturer for up to 90 days of weather exposure.
   6. 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.
   7. Complies with NFPA 285 requirements for wall assembly.
   8. Seam and Perimeter Tape: As recommended by sheet manufacturer.
   9. Low-Temperature Formulation: If application temperature is expected to be below 40 degrees F, provide complementary low-temperature product if manufacturer's standard listed product below is not approved for low temperatures. Low-temperature product shall comply with other performance requirements listed and shall be submitted for approval.
   10. Products:
      a. Carlisle Coatings and Waterproofing, Inc; Fire Resist Barritech NP / NP-LT.
      b. Henry Company; Air-Bloc 16MR.
      c. Hohmann & Barnard, Inc; ENVIRO-BARRIER.
      d. Master Builders Solutions; MasterSeal AWB 660 I.
      e. Polyguard Products; Airlok Flex.
      f. TK Products; TK-AIRMAX 2102.
      g. Tremco Commercial Sealants & Waterproofing; ExoAir 130.
      h. W.R. Meadows, Inc.; Air-Shield LSR.
      i. Substitutions: See Section 016000 - Product Requirements.

2.02 ACCESSORIES

A. Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions.

B. Compatibility of Materials: Provide sealants, tapes, transition membranes, and other accessory materials that are tested to be compatible with the primary air barrier material and with each other. Provide compatibility charts with product data submittal indicating material compatibility.

C. Primer: Liquid applied polymer, of type recommended by air-barrier manufacturer for substrate.

D. Membrane at Transitions in Substrate and Connections to Adjacent Elements: Nominal 40-mil thick, impermeable, self-adhering sheet membrane.
   1. Available Products:
      a. Carlisle Coatings and Waterproofing; CCW-705.
      b. Grace Construction Products; Perm-A-Barrier Flashing.
      c. Henry Company; Blueskin SA.
      d. Polyguard Products; Airlok Sheet 400 NP.
      e. Tremco, Inc.; ExoAir 110.
      f. W. R. Meadows, Inc.; Air Shield.

E. Counterflashing for Masonry Through-Wall Flashing: Nominal 40-mil thick, impermeable, self-adhering membrane.
   1. Available Products:
      a. Carlisle Coatings and Waterproofing; CCW-705 TWF.
      b. Grace Construction Products; Perm-A-Barrier Flashing.
      c. Henry Company; Blueskin TWF.
      d. Polyguard Products; Airlok Sheet 400 NP.
      e. Tremco, Inc.; ExoAir TWF.
      f. W. R. Meadows, Inc.; Detail Strip.

F. Preformed Transition Membrane: Semirigid silicone or polyester composition, tapered edges, tear resistant.
   1. Products:
      a. Dow; DOWSIL Silicone Transition Strip and System.
      b. Elbex; Elbex HS Silicone Sheeting, with compatible GE or Dow sealant.
      c. Tremco Commercial Sealants & Waterproofing; ProGlaze ETA System 1.
      d. Substitutions: See Section 016000 - Product Requirements.

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. Fluid-Applied Coatings or Membranes:
   1. Prepare substrate in accordance with manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
   2. Where exterior masonry veneer is being installed, install masonry anchors before installing air barrier over masonry; provide airtight seal around anchors.
   3. Apply fluid-applied air barrier coating in accordance with manufacturer's instructions and to manufacturer's required thickness, but no less than 20 mils dry film thickness (DFT).
   4. Apply bead or trowel coat of mastic sealant with minimum thickness of 1/4 inch along coating seams, rough cuts, and as recommended by manufacturer.
   5. Use flashing to seal to adjacent construction and to bridge joints in coating substrate.

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.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Coordination of ABAA Tests and Inspections:
   1. Provide testing and inspection required by ABAA QAP.
   2. Notify ABAA in writing of schedule for air barrier work, and allow adequate time for testing and inspection.
   3. Cooperate with ABAA testing agency.
   4. Allow access to air barrier work areas and staging.
   5. Do not cover air barrier work until tested, inspected, and accepted.

C. Do not cover installed air barriers until required inspections have been completed.

3.05 PROTECTION

A. Do not leave materials exposed to weather/UV light longer than recommended by manufacturer.

END OF SECTION 072700

SECTION 074213
METAL WALL PANELS

PART 1 GENERAL

1.01 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).

B. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.

1.02 SUBMITTALS

A. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.

B. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, and methods of anchorage.

C. Selection Samples: Submit manufacturer's color charts representing manufacturer's standard range of available colors.

D. Verification Samples: Submit physical samples in manufacturer's standard size indicating panel profile and selected color, for each type of product required.

E. Test Reports: Submit test report verifying compliance with NFPA 285 for previously-tested exterior wall assembly.

F. Installer's qualification statement.

1.03 QUALITY ASSURANCE

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

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

B. Store prefinished 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.

1.05 FIELD CONDITIONS

A. Do not install wall panels when air temperature or relative humidity are outside manufacturer's limits.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Correct defective work within a twenty year period after Date of Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.

C. Weathertightness Warranty: Correct defective work within a five year period after Date of Substantial Completion, including defects in water tightness and integrity of seals for metal wall panels.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Wall Panels - Concealed Fasteners:
   1. Basis-of-Design: Petersen Aluminum Corporation (Pac-Clad); Flush Wall Panels: Smooth Panel.
   2. ATAS International, Inc.
   3. Centria.
   4. Construction Metal Products, Inc.
   5. Dimensional Metals, Inc.
   6. Englert, Inc.
   7. Fabral.
   8. Metal Roofing Systems, Inc.
   9. Morin Corporation.

2.02 METAL WALL PANEL SYSTEM

A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
   1. 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.
   2. Fire Performance: Tested in accordance with, and complying with acceptance criteria of NFPA 285.
   3. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
   4. 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.
   5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
   7. Corners: Factory-fabricated in one continuous piece with minimum 2-inch returns.

B. Exterior Wall Panels:
   1. Profile: Vertical; style as indicated.
   2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous gaskets.
   3. Material: Precoated steel sheet, 22 gauge, 0.0299 inch minimum thickness.
   4. Panel Width: 12-inches, O.C.
   5. Color: To be selected by Architect from manufacturer's full range.

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. Expansion Joints: Same material, thickness and finish as exterior sheets; manufacturer's standard brake formed type, of profile to suit system.

E. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

F. Anchors: Galvanized steel.

2.03 FINISHES

A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer’s standard line.

2.04 ACCESSORIES

A. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.

B. Concealed Sealants: Non-curing butyl sealant or tape sealant, see Section 079200

C. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.

D. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panels.

3.02 PREPARATION

A. Install subgirts/furring perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane, and spaced at intervals indicated.

B. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

3.03 INSTALLATION

A. Install panels on walls and soffits in accordance with manufacturer's instructions.

B. Fasten panels to structural supports; aligned, level, and plumb.

C. Locate joints over supports.

D. Lap panel ends 2 inches, minimum.

E. Provide expansion and control joints where length exceeds that recommended by manufacturer.

F. Use concealed fasteners unless otherwise indicated by Architect.

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. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

3.06 PROTECTION

A. Protect metal wall panels until completion of project.

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

END OF SECTION 074213

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 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).

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

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

D. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

E. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.

F. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free.

H. SMACNA (ASMM) - Architectural Sheet Metal Manual.

1.02 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used including technical material properties.
   1. Include installation instructions and manufacturer's recommendations for installation and maintenance.
   2. Include ANSI/SPRI/FM 4435/ES-1 wind pull-off performance data for systems that will be used in edge metal conditions.

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

C. Selection Samples: Provide manufacturer's color charts for each product and material requiring color selection.

D. Verification Samples: Submit physical samples, manufacturer's standard size, for each selected color.

1.03 QUALITY ASSURANCE

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

B. Fabricator and Installer Qualifications: Company specializing in sheet metal work, with experience in projects of size and scope similar to this Project.

1.04 MOCK-UP

A. See Section 014000 - Quality Requirements for additional requirements.

B. Integrated Exterior Mockup: Attend preinstallation conference and provide metal flashing/trim work for integrated exterior mockup as indicated on Drawings and as specified in Division 1 Section "Quality Requirements."

1.05 DELIVERY, STORAGE, AND HANDLING

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

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

PART 2 PRODUCTS

2.01 SHEET MATERIALS

A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge (0.028-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: To be selected by Architect from Manufacturer's full range.

B. Pre-Finished Aluminum: ASTM B209/B209M; 18 gauge, 0.040 inch thick; plain finish shop pre-coated with PVDF coating.
   1. Polyvinylidene Fluoride (PVDF) Coating: Superior performing organic powder coating, AAMA 2605; pretreated metal with two-coat system including primer and color coat with at least 70 percent PVDF coating.
   2. Color: To be selected by Architect from Manufacturer's full range.

C. Stainless Steel: ASTM A666/A666M, Type 304 alloy, soft temper, 24 gauge (0.025-inch) thick; smooth No. 2D finish.

D. Copper: ASTM B370, cold rolled 16 oz/sq ft, 24 gauge, 0.0216 inch thick; natural finish.

2.02 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

E. Tin edges of copper sheet to be soldered; solder shop formed metal joints, and after soldering, remove flux, wipe and wash solder joints clean; provide weathertight joints.

F. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.
   1. Hem exterior corners of flashings and drip edges, in a manner that eliminates sharp, exposed cut metal edges, at locations below 6'-0" above grade (locations within reach range of building occupants).

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

2.03 GUTTERS AND DOWNSPOUTS

A. General: Provide minimum 0.040-inch aluminum extrusions for gutters and minimum 0.032-inch aluminum for downspouts. Finish all parts of gutter/downspout system a single color to match, including brackets, elbows and bends, and exposed fastener heads.

B. Gutters: SMACNA Ogee profile (Style K); unless otherwise indicated.

C. Downspouts: Rectangular profile; unless otherwise indicated.

D. Gutter and Downspout Sizing: Unless otherwise indicated, provide 4-inch deep by 5-inch wide downspouts, with gutter depth to accept 4-inch deep downspout.

E. Accessories: Profiled to suit gutters and downspouts. Provide additional elbows, bends, extended bracket depths, and other accessories as required for downspouts to avoid conflict with cladding profiles, masonry or precast extrusions, and other surface ornamentation on wall.
   1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
   2. Gutter Supports: Straps and spacer bars (SMACNA figure 1-17), spaced no more than 24 inches on center.
   3. Downspout Supports: Brackets; spaced no more than 60 inches on center.
   4. Downspout Strainers: Provide ball-type mesh strainer at each downspout; pre-fabricated, non-corrosive construction compatible with gutter/downspout material.

F. Splash Blocks: Precast concrete type, of size and profiles indicated; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment. Lightweight "patio" blocks are not acceptable.
   1. Provide a splash block at all conditions where downspout is not indicated to connect to downspout boot, and at conditions where downspout empties onto lower roof.

G. Downspout Boots: Cast iron, inlet sized to match downspout; outlet sized for underground drainage piping. Coordinate with Plumbing Drawings and Division 22.

H. Seal metal joints.

2.04 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.

B. Primer Type: Zinc chromate.

C. Concealed Sealants: Non-curing butyl sealant.

D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

E. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

F. Reglets and Counterflashings (Masonry): Embedded type, copper. Coordinate with Division 4 Section "Unit Masonry."
   1. Existing Brick: Saw cut joint in brick joints to uniform 3/4-inch depth. Insert preformed metal receiver/reglet piece to full depth of saw cut and secure it with lead wedges at 12-inches o.c. Place continuous backer rod and elastomeric sealant in cut joint reglet. Insert the separate counterflashing piece into reglet so that bottom of flashing makes permanent spring clamping contact with base flashing.

G. Reglets and Counterflashings (Non-Masonry): Surface mounted two-piece reglet and counterflashing, or one-piece counterflashing, fabricated of pre-finished aluminum or galvanized steel.

PART 3 EXECUTION

3.01 EXAMINATION

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

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

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Install surface mounted reglets and one-piece counterflashings true to lines and levels, and seal tops with sealant.

C. 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 SMACNA installation instructions and drawing details.

B. For reglets installed into masonry veneer, furnish reglets to mason for installation as Division 4 Unit Masonry work progresses.

C. Insert flashings into reglets to form tight fit; secure in place with wedges; seal flashings into reglets with sealant.

D. Secure flashings in place using concealed fasteners.

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

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

G. Seal metal joints watertight.

H. Secure gutters and downspouts in place with concealed fasteners.

I. Slope gutters 1/4 inch per 10 feet, minimum.

J. Connect downspouts to downspout boots, and grout connection watertight.

K. At low roof conditions, and where not indicated to connect to downspout boots, provide a bottom elbow and set splash blocks under downspouts.

END OF SECTION 076200

SECTION 078400
FIRESTOPPING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems.

C. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

D. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

E. ITS (DIR) - Directory of Listed Products.

F. SCAQMD 1113 - Architectural Coatings.

G. FM (AG) - FM Approval Guide.

H. UL 1479 - Standard for Fire Tests of Penetration Firestops.

I. UL (FRD) - Fire Resistance Directory.

1.02 SUBMITTALS

A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.

B. Product Data: Provide data on product characteristics, performance ratings, and limitations.

C. Installer's qualification statement.

1.03 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. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.

B. Labeling: Provide permanent labels adjacent to each firestopping assembly. Labels shall be durable metal or plastic and fastened mechanically or with a self-adhering backing. Labels shall include the tested assembly/system number, fire rating of the adjacent building element/ firestopping, the firestopping installer and certification, date of installation, and specific instructions to "Do Not Disturb" and "Alert Building Personnel of Damage."

1. Coordinate with Division 09 "Painting" for stenciled painted labeling of fire-rated walls and partitions.

C. Installer Qualifications: Company specializing in performing the work of this section and trained/certified by firestopping manufacturer.

1.04 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.

B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
   1. 3M Fire Protection Products.
   2. A/D Fire Protection Systems Inc.
   3. Hilti, Inc.
   4. RectorSeal, a CSW Industrials Company.
   5. Specified Technologies Inc.
   6. Tremco Commercial Sealants & Waterproofing.
   7. Substitutions: See Section 016000 - Product Requirements.

2.02 MATERIALS

A. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero (0) in accordance with ASTM G21.

B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

C. Low-Emitting Materials:
   1. Paints and Coatings: Paints and coatings field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet applicable VOC limits of CARB (SCM) or SCAQMD 1113.
   2. Adhesives and Sealants: Adhesives and sealants field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.03 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. Temperature Rise: Provide systems that have been tested to show T Rating as indicated, but not less than 1 hour.

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.

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.

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. Air Leakage (Smoke Barriers): Provide systems that have been tested to show L Rating of no more than 5.0 cfm/sq. ft., both at ambient and elevated 400 deg F temperatures.

2.04 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.

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.

C. Install backing materials to prevent liquid material from leakage.

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.

C. Install labeling required by code.
   1. Coordinate with Division 09 Painting contractor to ensure that all fire-rated walls and partitions are properly labeled.

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION 078400

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.

B. ASTM C834 - Standard Specification for Latex Sealants.

C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.

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

E. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants.

G. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.

H. ASTM C1311 - Standard Specification for Solvent Release Sealants.

I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints.

J. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

K. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board.

L. SCAQMD 1113 - Architectural Coatings.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:

1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
2. List of backing materials approved for use with the specific product.
3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
4. Substrates the product should not be used on.

B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

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

E. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.

F. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.

G. Executed warranty.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section, and is approved and/or certified by manufacturer.

B. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
   1. Adhesion Testing: In accordance with ASTM C794.
   2. Compatibility Testing: In accordance with ASTM C1087.
   3. Allow sufficient time for testing to avoid delaying the work.
   4. Deliver sufficient samples to manufacturer for testing.
   5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

C. Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
   1. Identification of testing agency.
   2. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
      a. Test date.
      b. Copy of test method documents.
      c. Age of sealant upon date of testing.
      d. Test results, modeled after the sample form in the test method document.
      e. Indicate use of photographic record of test.

D. Field Adhesion Test Procedures:
   1. Allow sealants to fully cure as recommended by manufacturer before testing.
   2. Have a copy of the test method document available during tests.
   3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
   4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
   5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
   6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.

E. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
   1. Sample: At least 18 inches long.
   2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch by that percentage; if adhesion failure occurs before the 1-inch mark is that distance from the substrate, the test has failed.
   3. If either adhesive or cohesive failure occurs before minimum elongation, take necessary measures to correct conditions and retest; record each modification to products or installation procedures.

1.04 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 5-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

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

B. Exterior Joints: Use non-sag non-staining silicone sealant (ES-1), unless otherwise indicated.
   1. Type ES-5 - Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant.
   2. Type ES-1 or ES-2 - Joints between walls and frames of doors, windows, and louvers.
   3. Type SRS-1 - Bedding joints.

C. Interior Joints: Use non-sag polyurethane sealant (ES-4), unless otherwise indicated.
   1. Type ES-3 - Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
   2. Type ES-5 - Floor Joints: Self-leveling polyurethane "traffic-grade" sealant.
   3. Type AS-1 - Joints at sound-rated or acoustic assemblies, and at full-height panel wall and partition assemblies indicated to have sound attenuation batts.
   4. Type LS-1 - Joints around perimeters of interior doors, windows, elevator entrances, and similar framed openings.

D. Interior Wet Areas: Bathrooms, restrooms, and kitchens; fixtures in wet areas include plumbing fixtures, countertops, cabinets, and other similar items.

E. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.02 JOINT SEALANTS - GENERAL

A. Low-Emitting Materials:
   1. Paints and Coatings: Paints and coatings field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet applicable VOC limits of CARB (SCM) or SCAQMD 1113.
   2. Adhesives and Sealants: Adhesives and sealants field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.03 NONSAG JOINT SEALANTS

A. Type ES-1 - Low-Modulus Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 50 percent, minimum.
   2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Color: To be selected by Architect from manufacturer's full range.
   5. Products:
      a. Master Builders Solutions; MasterSeal NP 100.
      b. Momentive Performance Materials, Inc/GE Silicones; SCS 2000 SilPruf.
      c. Pecora Corporation; Pecora 890 NST (Non-Staining Technology) or 890 FST (Field Tint).
      d. Polymeric Systems, Inc.; PSI-641.
      e. Tremco Commercial Sealants & Waterproofing; Spectrem 3 or Spectrem 4-TS (Field Tint).
      f. Substitutions: See Section 016000 - Product Requirements.

B. Type ES-2 - Medium-Modulus Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus and minus 50 percent, minimum.
   2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Color: To be selected by Architect from manufacturer's full range.
   5. Manufacturers:
      a. Dow Chemical Company; DOWSIL 795 Silicone Building Sealant.
      b. Momentive Performance Materials, Inc/GE Silicones; SCS9000 SilPruf NB - Non-Staining Silicone Weatherproofing Sealant.
      c. Pecora Corporation; Pecora 895 NST (Non-Staining Technology).
      d. Tremco Commercial Sealants & Waterproofing; Spectrem 2.
      e. Substitutions: See Section 016000 - Product Requirements.

C. Type ES-3 - Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic. Neutral- or acid-curing per manufacturer standard.
   1. Color: White.
   2. Products:
      a. Dow; DOWSIL 786 Mildew Resistant.

b. Pecora Corporation; Pecora 898 NST (Non-Staining Technology).
c. Tremco Commercial Sealants & Waterproofing; Tremsil 600 or Tremsil 200.
d. Substitutions: See Section 016000 - Product Requirements.

D. Type ES-4 - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Color: To be selected by Architect from manufacturer's full range.
3. Products:
a. ITW Polymers Sealants; Permathane SM 7200.
b. Master Builders Solutions by BASF; MasterSeal NP2.
c. Pecora Corporation; DynaTrol II.
d. Sika Corporation; Sikaflex-2c NS.
e. Tremco Commercial Sealants & Waterproofing; Dymeric 240 FC or Vulkem 227.
f. Substitutions: See Section 016000 - Product Requirements.

E. Type LS-1 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
1. Color: To be selected by Architect from manufacturer's full range.
2. Grade: ASTM C834; Grade NF.
3. Products:
a. Bostik, Inc; Chem-Calk 600.
b. ITW Polymers Sealants; SM 8200.
c. Master Builders Solutions; MasterSeal NP 520.
d. Pecora Corporation; AC-20 +Silicone.
e. Tremco Commercial Sealants & Waterproofing; Tremflex 834.
f. Substitutions: See Section 016000 - Product Requirements.

F. Type AS-1 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging acoustical sealant.
1. Color: Standard colors matching finished surfaces, Type OP (opaque).
2. Grade: ASTM C834; Grade NF.
3. Manufacturers:
a. Accumetric LLC; BOSS 826 Acoustical Sound Sealant.
b. Franklin International, Inc; Titebond GREENchoice Acoustical Smoke & Sound Sealant.
c. Hilti, Inc; CP 506 Smoke and Acoustical Sealant.
d. Master Builders Solutions; MasterSeal NP 520.
e. Momentive Performance Materials, Inc/GE Silicones; RCS20 Acoustical.
f. Pecora Corporation; AC-20 FTR or AIS-919.
g. Specified Technologies Inc; Smoke N' Sound Acoustical Sealant.
h. Tremco Commercial Sealants & Waterproofing; Tremstop Smoke and Sound.
i. Substitutions: See Section 016000 - Product Requirements.

G. Type SRS-1 - Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag; not expected to withstand continuous water immersion or traffic.
1. Products:
a. Bostik, Inc; Chem-Calk 300.

b. Pecora Corporation; Pecora BC-158 Butyl Rubber Sealant.
c. Tremco Inc.; Tremco Butyl Sealant.
d. Substitutions: See Section 016000 - Product Requirements.

2.04 SELF-LEVELING JOINT SEALANTS

A. Type ES-5 - Self-Leveling Polyurethane Sealant for Traffic: Polyurethane; ASTM C920, Grade P, Uses T, M and A; single or multi-component; explicitly approved by manufacturer for traffic exposure.
   1. Movement Capability: Plus and minus 25 percent, minimum.
   2. Products:
      a. Bostik, Inc.; Chem-Calk 550.
      b. Pacific Polymers, Inc; Elast-Thane 227 Type 1 (Self-Leveling).
      c. Pecora Corporation; Dynatrol II-SL.
      d. Polymeric Systems, Inc; PSI-270SL.
      e. Tremco Commercial Sealants & Waterproofing; Vulkem 445SSL.
      f. W. R. MEADOWS, Inc; POURTHANE SL.
      g. Substitutions: See Section 016000 - Product Requirements.

2.05 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.

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

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

D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

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

D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
   1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
   2. Notify Architect of date and time that tests will be performed, at least seven days in advance.
   3. Record each test on Preinstallation Adhesion Test Log as indicated.
   4. If any sample fails, review products and installation procedures, consult manufacturer, or take other measures that are necessary to ensure adhesion; retest in a different location; if unable to obtain satisfactory adhesion, report to Architect.

5. After completion of tests, remove remaining sample material and prepare joints for new sealant installation.

3.02 PREPARATION

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

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

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

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

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

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install 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 backing tape where backer rod cannot be used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

I. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.

C. Destructive Adhesion Testing: If there are any failures in first 1,000 linear feet, notify Architect immediately.

D. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

E. Repair destructive test location damage immediately after evaluation and recording of results.

END OF SECTION 079200

SECTION 079513
EXPANSION JOINT COVER ASSEMBLIES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ITS (DIR) - Directory of Listed Products.

B. UL (DIR) - Online Certifications Directory.

1.02 ADMINISTRATIVE REQUIREMENTS

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

1.03 SUBMITTALS

A. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish.

B. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction and anchorage locations.

C. Selection Samples: Provide manufacturer's color charts, for exposed finish options for each expansion joint product.

PART 2 PRODUCTS

2.01 EXPANSION JOINT COVER ASSEMBLIES, GENERAL

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

1. Source Limitations: Provide each type of joint through a single source from a single manufacturer.
2. Joint Dimensions and Configurations: Provide expansion joint covers sized for _____ joint widths, unless otherwise indicated.
3. Joint Movement Capability: If not indicated, provide minimum 50 percent (+25/-25) joint movement capability .
4. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
5. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.
6. Finish: Color for all joints shall be selected from manufacturer's full range of available colors.
    a. Where length of expansion joint spans multiple finishes (for example, exterior wall assembly with face brick 1, precast sill/water table, and face brick 2), provide different finish joint color at each building finish material.

B. Exterior Joints at Cavity/Masonry Veneer Walls: Provide a "double" preformed foam joint at exterior joints, with aesthetic joint at face of veneer masonry, and a functional joint (manufacturer's standard neutral color) in the plane of insulation to maintain continuity of insulation and water and air barriers.

C. Covers in Gypsum Board Assemblies: Provide style with anchoring wings that can be completely covered by joint compound.

D. Covers in Fire Rated Assemblies: Provide manufacturer's standard fire barrier product, for a complete cover assembly having fire rating equivalent to that of assembly into which it is installed.
   1. Acceptable Evaluation Agencies: UL (DIR) and ITS (DIR).

E. Roof Expansion Joints: Refer to Division 7 Section "Roof Specialties."

2.02 INTERIOR FLOOR JOINTS

2.03 INTERIOR WALL JOINTS

2.04 EXTERIOR JOINTS

A. Exterior Wall Joints (Preformed Foam): Pre-compressed and self-expanding, open-cell urethane foam. Pre-coated with water repellant coating on exterior surface, and with adhesive coating on sides to fit in opening. Joint shall allow for minimum 50% total movement (25% expansion, 25% contraction).
   1. Products:
      a. Construction Specialties; Model VF.
      b. EMSEAL Joint Systems, Ltd.; Colorseal.
      c. Erie Metal Specialties; CSS-Series.
      d. MM Systems; Series ESS.
      e. Schul International Company, Inc.; Color Econoseal.
      f. Watson Bowman Acme Corp; WeatherSeal II.
      g. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

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

B. Verify that frames and anchors installed by others are in correct locations and suitable for installation of remainder of assembly.

3.02 INSTALLATION

A. Install components and accessories in accordance with manufacturer's instructions.

B. Align work plumb and level, flush with adjacent surfaces.

C. Rigidly anchor to substrate to prevent misalignment.

3.03 PROTECTION

A. Do not permit traffic over unprotected floor joint surfaces.

B. Where applicable, provide strippable coating or tape to protect finish surface; remove immediately prior to Substantial Completion.

END OF SECTION 079513

SECTION 081113
STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.

D. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.

1.02 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

C. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.03 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.
   2. Curries, an Assa Abloy Group company.
   3. Fleming Door Products, an Assa Abloy Group company.
   4. Krieger Specialty Products.
   5. Mesker, dormakaba Group.
   6. Metal Products, Inc. (MPI)
   7. Pioneer Industries, Inc.; an Assa Abloy Group company.
   8. Republic Doors, an Allegion brand.
   9. Steelcraft, an Allegion brand.
   10. Technical Glass Products.

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. Door Top and Bottom Closures: Flush end closure channel, with top and door faces aligned.
    a. Inverted channel closure is acceptable for bottom edges and top edges of interior doors that are not exposed to view from above.
4. Door Edge Profile: Beveled edge.
5. Typical Door Face Sheets: Flush.
6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
    a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

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. Door Finish: Factory primed and field finished.

B. Exterior Doors: Thermally insulated. Fabricate from metallic-coated steel sheet.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    a. Level 3 - Extra Heavy-duty.
    b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
    c. Model 2 - Seamless.
    d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
    e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
2. Door Core Material: Vertical steel stiffeners with fiberglass batts.
    a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
3. Door Thermal Resistance: R-Value of 6, minimum.
4. Door Thickness: 1-3/4 inches, nominal.
5. Weatherstripping: Refer to Division 08 "Door Hardware".

C. Fire-Rated Doors: Comply with NFPA 80.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    a. Match construction and physical performance levels above for interior or exterior doors, as applicable.

2. Fire Rating: As indicated, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
3. Per NFPA 80, fire exit doors shall be labeled “Fire Door to Be Equipped with Fire Exit Hardware,” and shall be reinforced and constructed to maintain the rating of the specific listed and labeled fire exit devices mounted on them.
4. Provide units listed and labeled by UL (DIR) or ITS (DIR).
   a. Attach fire rating label to each fire rated unit.
5. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
6. Door Thickness: 1-3/4 inches, nominal.

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. Frame Finish: Factory primed and field finished.

C. Exterior Door Frames: Face welded type.
   1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
   2. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
   3. Weatherstripping: Refer to Division 08 Section "Door Hardware".

D. Door Frames, Fire-Rated: Face welded type.
   1. Fire Rating: Same as door, labeled.
   2. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.

E. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.

F. Mullions for Pairs of Doors: Fixed, except where removable is indicated, with profile similar to jambs.
   1. Where removable mullion is indicated, coordinate with removable mullion to be provided as an exit device accessory per Division 08 Section "Door Hardware."

G. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.

H. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.

I. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

J. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

A. Glazing: As specified in Section 088000.

B. Removable and Fixed Stops: Formed sheet steel, mitered or butted corners; prepared for countersink style tamper proof screws.

1. Provide fixed stops for exterior applications, and toward the secure side of interior glazed lites (for example, toward the corridor or more public accessible spaces).
2. Heights of Stops: Unless otherwise indicated or recommended by glazing manufacturer, provide standard 5/8-inch height stops where allowed by standards, and provide 3/4-inch height for exterior 1-inch glazing units.

C. Astragals and Edges for Double Doors: Pairs of door astragals, and door edge sealing and protection devices.
1. Provide UL listed products, complying with NFPA 80, and as required to maintain indicated fire rating.
2. Provide surface mounted overlapping-type astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.

D. Mechanical Fasteners for Concealed Metal-to-Metal Connections: Self-drilling, self-tapping, steel with electroplated zinc finish.

E. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

F. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

G. 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.
1. Install in accordance with ANSI/SDI A250.11.
2. Do not remove temporary frame spreaders until after frames have been properly set and secured.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Install door hardware as specified in Section 087100.

F. Comply with glazing installation requirements of Section 088000.

G. Coordinate installation of electrical connections to electrical hardware items.

H. 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.

1. Comply with clearances indicated in NFPA 80 for fire-rated doors.

B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ALTERATIONS TO EXISTING HOLLOW METAL DOORS AND FRAMES

A. Modify existing frames in which door swing will be reversed as follows:
   1. Close existing mortise cut-outs with filler plates welded in place and finished flush with metallic body putty. Similarly, close and finish other existing hardware mounting holes or cut-outs. Provide cut-outs in frame to suit mortised hardware. Provide and weld in place new hinge reinforcement. Completed frame shall be free of dents, abrasions, and visible defects in finished surfaces at patched or plugged areas, and be primed and ready for painted finish.
   2. In lieu of modifications indicated above Contractor may remove existing frames and either:
      a. Replace existing frame with similar existing frame indicated to be demolished that is of proper hand for new swing, or:
      b. Provide a post-installed frame as approved into the existing rough opening.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION 081113

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition.

B. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

C. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

D. UL 10B - Standard for Fire Tests of Door Assemblies.

1.02 SUBMITTALS

A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

C. Selection Samples: Submit manufacturer's color charts indicating full range of available colors, for each product requiring color selection.

D. Verification Samples: Submit three physical samples of door veneer, approximately 8 by 8 inches in size illustrating standard range of wood grain, stain color, and sheen.

E. Warranty, executed in Owner's name.

1.03 QUALITY ASSURANCE

A. Source Limitations: Provide all flush wood doors from a single manufacturer.

1.04 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.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Eggers Industries.
   2. Lambton Doors.
   3. Masonite Architectural; Aspiro Select Wood Veneer Doors.
   4. Oshkosh Door.
   5. VT Industries, Inc.

2.02 DOORS

A. Doors: See drawings for locations and additional requirements.
   1. Doors shall be manufactured by the hot-press method, bonding faces, crossbands, and core together in a single operation with Type I glue. Doors manufactured by cold-pressing 2- or 3-ply pre-manufactured door skins to multiple cores in the same press will not be accepted.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled.
      a. Provide stile construction with concealed intumescent seals at pairs of doors, meeting required fire-ratings without the need of astragal or metal edge construction.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), particleboard Grade LD-2 per ANSI A 208.1; plies and faces as indicated.
   1. Provide structural-composite-lumber (SCLC) core for doors with glazing area cut out for 9-inch stile width doors.
   2. Provide structural-composite-lumber (SCLC) core for doors with exit devices.

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

2.04 DOOR FACINGS

A. Veneer Facing for Transparent Finish: 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.
   1. Vertical Edges: Any option allowed by quality standard for grade.
   2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.

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.

C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.

D. For doors indicated to be factory-finished, factory install glazing in doors in compliance with quality standards specified, using manufacturer's standard elastomeric glazing sealant.

E. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

F. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

G. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 5, Varnish, Conversion or System 11, catalyzed polyurethane.
      b. Sheen: Satin.

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing where doors will be exposed to view from above.

2.07 ACCESSORIES

A. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws. At fire-rated doors, provide noncombustible wood stops with concealed metal clips for indicated fire rating.

B. Door Hardware: Refer to Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

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.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION 081416

SECTION 084313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site.

B. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.

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

D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).

G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

H. 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.

I. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

J. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

K. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.03 SUBMITTALS

A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.

B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

1. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

C. Selection Samples: Submit manufacturer's color charts representing manufacturer's full range of available colors, for each type of product required.

D. Verification Samples: Submit physical samples in manufacturer's standard size indicating actual panel material and selected colors, for each type of product required.

E. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.

F. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

G. Designer's qualification statement.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 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.

1.05 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.

1.06 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.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Material/Labor Warranty: Provide a 2-year material and workmanship warranty, covering failures including but not limited to, structural and performance failures, excessive material deterioration, failure of operating components, and water or air infiltration. Complete forms in Owner's name and register with warrantor.

C. Finish Warranty: Provide 10-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.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Aluminum-Framed Storefront - Exterior High-Performance - Double Thermal Break - Center Set - 2" x 4.5":
   1. EFCO Corp; 403X.
   2. Kawneer North America; 451UT.
   3. Oldcastle Building Envelope; 3000 XT.
   4. Tubelite, Inc; TU 24000 Therml=block.
   5. YKK AP America, Inc; YES 45 XT.

B. Aluminum-Framed Storefront - Interior - Non-Thermal - Center Set - 2" x 4.5":
   1. EFCO Corp; 402.
   2. Kawneer North America; Trifab VG 451.
   3. Oldcastle Building Envelope; FG 3000.
   4. Tubelite, Inc; E14000 Non-Thermal.
   5. YKK AP America, Inc; YES 45 FI.

C. Aluminum-Framed Entrance - Exterior - Thermally Broken/Insulated - Wide Stile. Thickness varies by manufacturer; coordinate hardware requirements with submitted product depth:
   1. EFCO Corp; 2" ThermaStile Aluminum Swing Entrance Doors. (2")
   2. Kawneer North America; 500T Insulpour. (2-1/4")
   3. Oldcastle Building Envelope; WS-500TC. (2-1/4")
   4. Tubelite, Inc; Therml=Block Entrance. (1-3/4")
   5. YKK AP America Inc; 50T. (2")

D. Aluminum-Framed Entrance - Interior - Standard - Uninsulated - 1.75-inch Thick - Wide Stile:
   1. EFCO Corp; D500.
   2. Kawneer North America; 500.
   3. Oldcastle Building Envelope; 500.
   4. Tubelite, Inc; Standard Wide Stile Doors.
   5. YKK AP America, Inc; 50D.

2.02 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 Position: Centered (front to back).
   2. 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.
   3. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
   4. 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.
   5. 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.
   6. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
   7. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.

B. Performance Requirements:
   1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, 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 and as indicated on Structural drawings.
      b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
   2. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 10 psf.
   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: 56, minimum, measured in accordance with AAMA 1503.
5. Overall U-value Including Glazing: 0.38 Btu/(hr sq ft deg F), maximum.
6. Solar Heat Gain Coefficient (SHGC) Including Glazing: 0.25, maximum, measured in accordance with NFRC 200.

2.03 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
   1. Glazing Stops: Flush.

B. Glazing: Refer to Section 088000.

C. Insulating Metal Infill Panels (Glazing Type GL-3): Insulated, aluminum, with edges formed to fit glazing channel and sealed.
   1. Total Nominal Thickness: 1 inch.
   2. Surface Burning Characteristics: Provide assemblies with Class A rating, with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   3. Face Sheets (Front and Back): Equal 0.024-inch smooth aluminum faces bonded to nominal 1/8-inch exterior grade hardboard or high-density corrugated polypropylene.
   4. Core: Rigid polyisocyanurate insulation core; minimum total panel R-value of 6.
   5. Custom Penetration/Cut-Out: At infill panel indicated on Drawings, provide a custom factory cut out to accomodate night drop box; wrap/seal all edges so that there is no exposed insulating core. Coordinate with manufacturer of through wall drop box for rough opening size.
   6. Finish: Same as storefront.
   7. Products:
      a. Citadel Architectural Products; GlazeGuard 1000 WR+.
      b. Laminators, Inc; Thermolite/Omega Foam-Ply.
      c. Mapes Architectural Products; Mapes-R Infill.
      d. Substitutions: See Section 016000 - Product Requirements.

D. Swing Doors: Glazed aluminum.
   1. Thickness: 1-3/4 inches.
   2. Top Rail: 7 inches wide.
   3. Vertical Stiles: 5 inches wide (wide stile).
   4. Bottom Rail: 12 inches wide.
   5. Glazing Stops: Beveled.
   6. Finish: Same as storefront.

2.04 MATERIALS AND ACCESSORIES

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Fasteners: Stainless steel.

C. Metal Extrusions and Accessories:
   1. Metal Trim, Filler, and Closures (Brake Metal): Form interior filler panels for closing ends of partition systems, concealing adjacent structural elements, and for other applications as indicated on Drawings. Form from minimum 0.050-inch aluminum sheet coil, producing a panel of same thickness as partitions or mullions unless otherwise indicated. Incorporate

reveals, trim, and concealed anchorages for attaching to adjacent surfaces. Finish trim to match storefront unless otherwise indicated.

2. Offset Anchorage System: Provide frame anchorage incorporating L-shaped offset anchors or strap anchor component, and finished extruded interlocking L-shaped cover trim matching storefront framing. Anchorage "clip and cover" system shall be engineered by storefront manufacturer.
3. Enhanced (High Performance) Sill Flashing: Provide thermally-broken extruded aluminum sill flashing with 2-inch tall back leg and bottom profile with outboard trough and weep holes to direct water to exterior. Provide full-frame-depth end dams mechanically attached to sill flashing extrusion and sealed with silicone. Provide silicone sill flashing splice sleeves and sealant as required at end dams and penetrations for anchorage. Provide finish to match framing.

D. Sill Flashing Sealant: Elastomeric silicone; compatible with flashing material.

E. Sealant for Setting Thresholds: Non-curing butyl type.

F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.05 FINISHES

A. Superior Performing Organic Coatings System: Manufacturer's standard multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (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. Color: To be selected by Architect from manufacturer's full range.

2.06 HARDWARE

A. For each door, include weatherstripping, sill sweep strip, and threshold.

B. Other Door Hardware: Refer to Section 087100.

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 exterior doors.

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. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

I. Set thresholds in bed of sealant and secure.

J. Install glass and infill panels using glazing method required to achieve performance criteria; see Section 088000.

K. 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. Provide services of storefront manufacturer's field representative to observe for proper installation of system and submit report.

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.

3.07 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION 084313

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section "Hollow Metal Doors and Frames".
2. Division 08 Section "Flush Wood Doors".
3. Division 08 Section "Sound Control Hollow Metal Door Assemblies".
4. Division 08 Section "Sound Control Wood Door Assemblies".
5. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
6. Division 08 Section "Fire-Rated Steel Framed Entrances".

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

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

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
b. Complete (risers, point-to-point) access control system block wiring diagrams.
c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

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

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

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the

manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

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

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

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

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

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

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardware shall not have any visible manufacturer names on exposed materials, except cylinders, when the door is in a closed position.

2.2 BUTT HINGES

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

1. Quantity: Provide the following hinge quantity:

   a. Two Hinges: For doors with heights up to 60 inches.
   b. Three Hinges: For doors with heights 61 to 90 inches.
   c. Four Hinges: For doors with heights 91 to 120 inches.
   d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

   a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
   b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

   a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
   b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

   a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

   a. Hager Companies (HA) - BB Series, 5-knuckle.
   b. Ives (IV) - 5BB Series, 5-knuckle.
   c. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.3 FLOOR CLOSERS AND PIVOTS

A. Pivots: ANSI/BHMA A156.4, Grade 1; space intermediate pivots equally not less than 25 inches on center apart or not more than 35 inches on center for doors over 121 inches high.

Pivot hinges to have oil impregnated bronze bearing in the top pivot and a radial roller and thrust bearing in the bottom pivot with the bottom pivot designed to carry the full weight of the door. Pivots to be UL listed for windstorm where applicable.

1. Manufacturers:

    a. Architectural Builders Hardware (AH).
    b. Ives (IV).
    c. Norton Rixson (RF).

2.4 POWER TRANSFER DEVICES

A. Electrified Quick Connect Intermediate Transfer Pivots: Provide electrified offset intermediate transfer pivot hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

    a. Architectural Builders Hardware (AH) - EL019-EZ (# wires).
    b. Norton Rixson (RF) - E-M19-QC (# wires).

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

    a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. Hager Companies (HA) - Quick Connect.
    b. McKinney (MK) - QC-C Series.
    c. Von Duprin (VD) - Connect.

2.5 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

    a. Burns Manufacturing (BU).
    b. Ives (IV).
    c. Rockwood (RO).

B. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
6. Manufacturers:

    a. Burns Manufacturing (BU).
    b. Ives (IV).
    c. Rockwood (RO).

2.6 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

1. Manufacturers:

    a. Match Existing, Field Verify.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.

2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Match Facility Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

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

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

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

2.7 CYLINDRICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:

a. ASSA ABLOY ACCENTRA (YA) - 5400LN Series.
b. dormakaba BEST (BE) - 9K Series.
c. Schlage (SC) - ND Series.

B. Cylindrical Indicator Locksets, Grade 1 (Commercial Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Visual status indicators in rose, displaying bold visuals for vacant or occupied lock status.

b. Meets ANSI/BHMA A156.41 for single motion egress.
c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
d. Three-year limited warranty.

2. Manufacturers:

a. ASSA ABLOY ACCENTRA (YA) - YPL Series.
b. Arrow (AW) - APL Series.

2.8 LOCK AND LATCH STRIKES

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

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

B. Standards: Comply with the following:

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

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Electromechanical exit devices shall have the following functions and features:

    a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
    b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
    c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
    d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.
    e. Five-year limited warranty for electromechanical features.

2. Manufacturers:

    a. ASSA ABLOY ACCENTRA (YA) - 7000 Series.
    b. dormakaba BEST (PR) - Apex 2000 Series.
    c. Von Duprin (VD) - 33A/99 Series.

2.10 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a 30-year warranty.

2. Manufacturers:

   a. ASSA ABLOY ACCENTRA (YA) - 4400 Series.
   b. LCN Closers (LC) - 4040 Series.
   c. Norton Rixson (NO) - 7500 Series.

C. Door Closers, Surface Mounted (Unitrol): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted closers with door stop mechanism to absorb dead stop shock on arm and top hinge. Hold-open arms to have a spring loaded mechanism in addition to shock absorber assembly. Arms to be provided with rigid steel main arm and secondary arm lengths proportional to the door width.

1. Manufacturers:

   a. ASSA ABLOY ACCENTRA (YA) - Unitrol Series.
   b. Corbin Russwin Hardware (RU) - Unitrol Series.
   c. Norton Rixson (NO) - Unitrol Series.

D. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:

    a. ASSA ABLOY ACCENTRA (YA) - 3500 Series.
    b. LCN Closers (LC) - 1450 Series.
    c. Norton Rixson (NO) - 8500 Series.

2.11 ARCHITECTURAL TRIM AND ACCESSORIES

A. Door Protective Trim:

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:

    a. Hager Companies (HA).
    b. Ives (IV).
    c. Rockwood (RO).

2.12 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

    a. Hager Companies (HA).
    b. Ives (IV).
    c. Rockwood (RO).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

a. dormakaba (DO).
b. Norton Rixson (RF).
c. Rockwood (RO).

2.13 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).
2. Reese Enterprises, Inc. (RE).
3. Zero (ZE).

2.14 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing

snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

    a. Alarm Controls (AK) - CP1-1026 Series.
    b. Security Door Controls (SD) - DPS Series.
    c. Securitron (SU) - DPS Series.

B. Switching Power Supplies: Provide the least number of power supplies at the appropriate amperage level sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Power supplies shall meet all functions and features as specified herein.

    a. UL listed dual voltage 12 or 24 VDC field selectable continuous output.
    b. Tolerates brownout or overvoltage input ± 15% of nominal voltage.
    c. Thermal shutdown protection with auto restart.
    d. Circuit breaker protection against overcurrent and reverse battery faults.
    e. Integrated battery charging circuit to prevent overvoltage on locking devices.
    f. Available with a single relay fire trigger or individually triggered relayed outputs.
    g. Monitoring options as specified.

2. Manufacturers:

    a. Altronix (AS) - Maximal 3.
    b. Life Safety Power (LP).
    c. Securitron (SU) - AQD Series.

2.15 FABRICATION

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

2.16 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 ADJUSTING

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

3.5 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.6 DEMONSTRATION

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

3.7 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

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

B. Manufacturer's Abbreviations:

1. MK - McKinney
2. RF - Rixson
3. RO - Rockwood
4. YA - ASSA ABLOY ACCENTRA
5. NO - Norton
6. PE - Pemko
7. OT - Other
8. SU - Securitron

Hardware Sets

Set: 1.0

2	Pivot Set	147	626	RF
2	Electrified Inter Pivot	EM19 x QC	626	RF
1	Exit Device	7220 B MELR 501F	630	YA
1	Exit Device	7220 B MELR EO	630	YA
1	Cylinder	AS REQUIRED x MATCH & EXTEND OWNER'S EXISTING KEY SYSTEM	626	
2	Pull	RM201 Mtg-Type 12XHD	US32D	RO
2	Surface Closer	UNI7500 x BRKTS REQ'D	689	NO
1	Set Weatherstrip	BY DOOR MANUFACTURER		OT
1	Threshold	171A		PE
2	Wiring Harness	QC-C1500P (@ JAMB)		MK
2	Wiring Harness	QC-C000P x LAR		MK
1	Wiring Diagram	RISER/POINT TO POINT		OT
1	Card Reader	FURNISHED IN OTHER SECTION		OT
2	Position Switch	DPS-M-BK		SU
1	Power Supply	AQD AS REQUIRED		SU

OPERATION: DOOR STATUS TO BE CONTROLLED BY BUILDING'S ACCESS CONTROL SYSTEM.

Set: 2.0

2	Pivot Set	147	626	RF
2	Electrified Inter Pivot	EM19 x QC	626	RF
1	Exit Device	7220 B MELR 501F	630	YA
1	Exit Device	7220 B MELR EO	630	YA
1	Cylinder	AS REQUIRED x MATCH & EXTEND OWNER'S EXISTING KEY SYSTEM	626	
2	Pull	RM201 Mtg-Type 12XHD	US32D	RO
1	Surface Closer	UNI7500 x BRKTS REQ'D	689	NO
1	Set Weatherstrip	BY DOOR MANUFACTURER		OT
1	Threshold	171A		PE
2	Wiring Harness	QC-C1500P (@ JAMB)		MK
2	Wiring Harness	QC-C000P x LAR		MK
1	Wiring Diagram	RISER/POINT TO POINT		OT
1	Card Reader	FURNISHED IN OTHER SECTION		OT
2	Position Switch	DPS-M-BK		SU
1	Power Supply	AQD AS REQUIRED		SU
1	Hardware	SEE NOTE BELOW		OT

OPERATION: DOOR AND AUTOMATIC OPERATOR STATUS TO BE CONTROLLED BY BUILDING'S ACCESS CONTROL SYSYTEM.

NOTE: EXISTING AUTOMATIC OPERATOR TO REMAIN AND BE REUSED.

Set: 3.0

	Hinge	TA2314 x NRP	US32D	MK
2	Flush Bolt	555/557	US26D	RO
1	Dust Proof Strike	570	US26D	RO
1	Exit Device	7130 662F	630	YA
1	Cylinder	AS REQUIRED x MATCH & EXTEND OWNER'S EXISTING KEY SYSTEM	626	
1	Overhead Stop	10 SERIES	630	RF
1	Surface Closer	CPS7500	689	NO
2	Kick Plate	K1050 8" high CSK	US32D	RO
1	Set Astragal	18041CNB		PE
1	Set Weatherstrip	303AS		PE
2	Door Sweep	315CN		PE
1	Threshold	2716A		PE

Set: 4.0

	Hinge	TA2714	US26D	MK
1	Privacy	AU YPL02	626	YA
1	Surface Closer	8501	689	NO
1	Kick Plate	K1050 8" high CSK	US32D	RO
1	Door Stop	409/441CU	US26D	RO
1	Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

Set: 5.0

	Hinge	TA2714	US26D	MK
1	Storeroom Lock	AU 5405LN LC	626	YA
1	Cylinder	AS REQUIRED x MATCH & EXTEND OWNER'S EXISTING KEY SYSTEM	626	
1	Door Stop	409/441CU	US26D	RO
1	Set Door Seals/Silencers	S88BL/608 AS REQUIRED		PE

Set: 6.0

1 Hardware	SEE NOTE BELOW	OT

NOTE: EXISTING DOOR - ALL EXISTING HARDWARE TO REMAIN AND BE REUSED.

END OF SECTION 087100

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.

E. ASTM C1036 - Standard Specification for Flat Glass.

F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

G. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.

H. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.

I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.

J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.

K. GANA (GM) - GANA Glazing Manual.

L. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use.

M. NFRC 100 - Procedure for Determining Fenestration Product U-factors.

N. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

O. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

1.02 ADMINISTRATIVE REQUIREMENTS

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

1.03 SUBMITTALS

A. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Certificate: Certify that products of this section meet or exceed specified requirements.

D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM) and IGMA TM-3000 for glazing installation methods.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's instructions. Deliver and store in a manner to prevent exposure to weather/moisture, direct sun/UV, and temperature changes.

1.06 FIELD CONDITIONS

A. Ambient Conditions: Do not install glazing, gasketing, or liquid sealants under adverse weather conditions, or when temperatures are above or below manufacturer's recommended limitations for sealant installation.
   1. Do not install glazing when ambient temperature is less than 40 degrees F.
   2. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

C. Laminated Glass: Provide a five (5) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. AGC Glass North America, Inc.
   2. Cardinal Glass Industries.
   3. Guardian Glass, LLC.
   4. Pilkington North America Inc.
   5. Saint Gobain North America.
   6. Viracon.
   7. Vitro Architectural Glass (formerly PPG Glass).

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Design Pressure: Calculated in accordance with ASCE 7 and values indicated on Structural Drawings.
   2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   3. 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.
   4. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide complete assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and air barrier.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
   1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
   3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
   1. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
   2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
   3. Provide Type I, Quality-Q3, Class 1 (clear) glazing unless otherwise indicated.
      a. Tinted Glazing: Where tinted glazing is indicated, provide Class 2 (tinted).
   4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
   5. Tinted Type: ASTM C1036, Class 2 - Tinted, Quality - Q3, with color and performance characteristics as indicated.
   6. Low-Iron (Ultraclear) Glass: ASTM C1048, Type I, Class I, Quality - Q3.
      a. Products:
         1) Cardinal; Purevision.
         2) Guardian; UltraClear.
         3) Pilkington; Optiwhite.
         4) Vitro; Starphire.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172. Laminated glass shall be free of foreign substances and air or glass pockets.
   1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class A or 16 CFR 1201 - Category II impact test requirements.
   2. Ionoplast Interlayer: 0.060 inch thick, minimum.
      a. Provide Kuraray "SentryGlas" or comparable ionoplast interlayer submitted as a properly formatted substitution request.
      b. Color: Clear.
      c. Interlayer Physical Properties:
         1) Young's Modulus:43 kpsi, when tested in accordance with ASTM D5026.
         2) Tensile Strength: 5.0 kpsi, when tested in accordance with ASTM D638.
         3) Elongation: 400%, when tested in accordance with ASTM D638.
         4) Flex Modulus: 50 kpsi, when tested in accordance with ASTM D790.
         5) Heat Deflection Temperature at 0.46 MPa: 110 degrees F, when tested in accordance with ASTM D648.

2.04 INSULATING GLASS UNITS

A. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

B. Insulating Glass Units: Types as indicated. IGU's shall be pre-assembled in factory of multiple lites, with dehydrated interspace.
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   3. Warm-Edge Spacers: Manufacturer's warm-edge technology design.
      a. Spacer Width: As required for specified insulating glass unit.
      b. Spacer Height: Manufacturer's standard.
      c. Products:
         1) H.B. Fuller Construction Products Inc; Kodispace 4SG.
         2) Quanex IG Systems, Inc; Super Spacer TriSeal.
         3) Technoform Glass Insulation; TGI-Spacer.
         4) Substitutions: See Section 016000 - Product Requirements.
   4. Spacer Color: Black.
   5. Edge Seal:
      a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
      b. Color: Black.
   6. Purge interpane space with dry air, hermetically sealed.

2.05 ACCESSORIES

A. Setting Blocks: Silicone, with 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 by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option I. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

C. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

D. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

E. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 FIELD QUALITY CONTROL

A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

B. Monitor and report installation procedures and unacceptable conditions.

3.06 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 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.

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

3.08 GLAZING SCHEDULE

A. Type G1 - Monolithic Interior Vision Glazing:

1. Applications: Interior glazing unless otherwise indicated.
2. Glass Type: Fully tempered float glass. Provide with safety glazing labeling.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal.
5. Glazing Method: Dry glazing method, gasket glazing.

B. Type G2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing except where otherwise indicated.
2. Space between lites filled with air.
3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
   a. Tint: Gray.
   b. Coating: Low-E (passive type), on #2 surface.
   c. Coating Products (Low-E; Clear):
      1) Cardinal; ES 28 #2.
      2) Guardian; SNX 62/27.
      3) Viracon; VNE 1-63.
      4) Vitro; Solarban 70.
4. Warm-edge spacer.
5. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
   a. Tint: Clear.
6. Total Thickness: 1 inch.
7. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.30, maximum.
8. Solar Heat Gain Coefficient (SHGC): 0.25, maximum.
9. Glazing Method: Dry glazing method, gasket glazing.
10. Provide with safety glazing labeling.

END OF SECTION 088000

SECTION 090364
WOOD FLOORING RESTORATION

PART 1 - GENERAL

1.01 SUBMITTALS

A. Product Data: Include material descriptions of individual components and finishes.

B. Shop Drawings: Show existing flooring layout including areas of replacement, existing flooring properties including direction and alignment, color, and widths.

C. Samples for Selection: Manufacturer`s color charts showing colors and glosses available for floor finish.

D. Qualification Data: For Installer.

E. Maintenance Data: For wood floor finish systems to include in maintenance manuals.

1.02 QUALITY ASSURANCE

A. Installer Qualifications: An experienced wood floor restorer who has completed wood floor assembly repair, replacement, and refinishing similar in material, design, and extent to that indicated for this Project and whose work has resulted in installations with a record of successful in-service performance.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, store and install materials accordance with manufacturer`s approved printed instructions.

1.04 PROJECT CONDITIONS

A. Restrict access to work area during the work. Limit circulation of dust due to refinishing operations.

PART 2 - PRODUCTS

2.01 WOOD FLOORING

A. Natural, Hardwood Plank Flooring: Verify all properties with existing wood flooring in field prior to furnishing new wood flooring.
   1. Species: Verify in field to match existing.
   2. Cut: Plain sawn.
   3. Actual Thickness: 25/32 inch.
   4. Actual Width: 3-1/4 inches.
   5. Edge: Tongue and groove.
   6. End: Square.
   7. Length: Verify in field to match existing..

2.02 ACCESSORIES

A. Wood Filler: Compatible with finish system components and recommended for refinishing use indicated. If required to match approved Samples, provide pigmented filler.

B. Stain Coat: After sanding and cleaning is complete, flooring shall be stained to obtain a consistent finish over both existing and new finish. Product shall be as recommended by flooring manufacturer; color to be selected by Architect to match existing flooring.

C. Natural Finish Woodwork: Satin Water-Borne Urethane Varnish Finish: 2 Finish coats over seal coat, 3.5 mils DFT.
   1. Seal Coat, and First and Second Finish Coats: Seal coat shall be 1 part thinner to 4 parts varnish; second and third coats shall be full strength varnish.
      a. Moore: N423 Benwood Stay Clear Acrylic Polyurethane Finish, Low Luster.
      b. PPG: 42786 Olympic Premium WB Urethane Satin Varnish.
      c. S-W: A68F90 Wood Classics Waterborne Polyurethane Varnish.

PART 3 - EXECUTION

3.01 INSPECTION AND REPAIR

A. Verify existing flooring finish, including species, stain color, and texture. Refinished floor finish shall match existing floor to greatest extent possible.

B. Inspect existing flooring, secure loose planks, and plug holes (if any) to attain sound flooring.
   1. Remove rotted or damaged wood flooring and prepare adjacent flooring for installation of replacement flooring. Verify condition of subflooring and structural joists after removal of wood flooring; notify Architect if existing structural components are damaged or deteriorate.
   2. Neatly cut and remove existing tongue and groove athletic flooring for replacement area in accordance with general requirements of Division 1 “Cutting and Patching” and written recommendations of MFMA.
      a. Existing plywood underlayment understood to be intact and to remain. Patch underlayment areas as required for infill of existing floor sleeve assemblies.
   3. Wood Conditioning: Move new wood flooring into spaces where they will be installed, no later than beginning of the conditioning period.
      a. Do not install wood flooring until wood components adjust to relative humidity of, and are at same temperature as, spaces where they are to be installed.
      b. Open sealed packages to allow wood components to acclimatize immediately on moving wood components into spaces in which they will be installed.

C. Remove existing cover plates, registers, and other items at floor penetrations, and store during flooring refinishing. Reinstall after floor refinishing is complete.

D. For pricing purposes, assume 50% of wood flooring shall require removal and replacement. All remaining existing wood flooring shall be refinished, to include stairs and other accessory spaces, such as under doorways and wood thresholds, as applicable.

E. Install replacement wood flooring in accordance with manufacturer's and NWFA instructions. Predrill and blind nail to subfloor. Lay flooring to match direction and alignment of existing flooring.

3.02 SANDING AND FINISHING

A. Follow applicable recommendations in National Wood Flooring Association's (NWFA's) “Wood Flooring Sand and Finish Guidelines.”

B. Sanding: Machine sand with coarse, medium, and fine grades of sandpaper (three “cuts”) to achieve a level, smooth, uniform surface without ridges or cups and sanding machine marks which would be visually noticeable after finishing. Remove sanding dust by tack or vacuum.
   1. Use Clark drum sander, Hummel 10- or 12-inch belt sander or comparable commercial sander for field, and edger and buffer. Use 3 grades of sandpaper, ending with 00 grade. Vacuum clean and immediately apply finish. Do not permit traffic on floor after sanding

and until finish is completed. Cover sanded floor with building paper to provide access for application of first finish coat.

C. Finish: Apply stain, and seal and finish coats of finish system according to finish manufacturer`s written instructions, including a first coat of penetrating sealer of type recommended. Provide not less than three coats total and not less than two finish coats. Follow manufacturer`s recommendations for drying time between coats. Buff between each coat. Retain empty containers for confirmation of film thickness. Prevent traffic on finished floor for a minimum of 10 days.

D. Reinstall existing floor insert cover plates.

E. Wax and buff completed finish as required, before permitting traffic on floor surface.

3.03 PROTECTION

A. Protect wood floors during remainder of construction period to allow finish to cure and to ensure that flooring and finish are without damage or deterioration at time of Substantial Completion.

1. Do not cover floors after finishing until finish reaches full cure, and not before seven days after applying last finish coat.
2. Do not move heavy and sharp objects directly overwood floors. Protect fully cured floor finishes and surfaces with plywood or hardboard panels to prevent damage from storing or moving objects over wood floors.

END OF SECTION 090364

SECTION 092216
COLD FORMED STEEL FRAMING - NON-STRUCTURAL (CFSF-NS)

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Refer to Section 054000 - Cold-Formed Steel Framing - Structural (CFSF-S): Requirements for structural, load-bearing, metal stud framing and overhead/suspended/bulkhead framing.

1.02 REFERENCE STANDARDS

A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

D. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.

E. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.

F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.

1.03 SUBMITTALS

A. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.

PART 2 PRODUCTS

2.01 FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: AISI S220; sheet steel, of size and properties necessary for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.

1. Steel Thickness (Studs and Runners): Minimum 0.0179-inch (18 mil / 25 gauge) unless otherwise required to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf, and as indicated below:
    a. Provide minimum 0.0329-inch thickness (33 mil / 20 gauge) for all partitions using 3-5/8-inch-deep studs where stud partition height is greater than 12 feet above floor level.
    b. Provide minimum 0.0329-inch (33 mil / 20 gauge - Structural) for high-density board applications, such as ASTM C1178 tile backing panels and ASTM C1629 abuse- or impact-resistant gypsum board, and at door frames.
    c. Provide minimum 0.0329-inch (33 mil / 20 gauge - Structural) for walls receiving heavy wall-hung items or loads, including but not limited to wall cabinets, wall-hung countertops, TV brackets, liquid tanks, folding and fixed seats, grab bars, handrails, exercise equipment, and shelving greater than 9 inches deep and over 3 feet in length.
2. Studs: C-shaped with flat faces.

3. Runners: U-shaped, sized to match studs.
4. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
    a. Minimum Steel Thickness: Provide minimum 0.0329-inch (33 mil / 20 gauge - Structural) for all shaft wall stud applications.
    b. Studs: C-T shaped shaft wall stud profile.
    c. Runners and Jamb Struts: J-shaped with tabs, sized to match studs.
5. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
6. Resilient Furring Channels: Single or double leg configuration; 1/2 inch channel depth.

B. Deflection and Firestop Track: Intumescent strip factory-applied to track flanges expands when exposed to heat or flames to provide a perimeter joint seal.

C. Non-Loadbearing Framing Accessories:
1. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
    a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
2. Bracing and Bridging: ASTM A653/A653M G90 galvanized steel; cold-rolled channel / hat-section profile; for lateral bracing of wall studs with slots for engaging on-module studs.
3. Framing Connectors: ASTM A653/A653M steel clips; secures cold rolled channel to wall studs for lateral bracing.
4. Sheet Metal Backing: 0.036 inch thick flat strap/plate.
5. Fasteners: Self-tapping screws designed for attachment of metal framing and recommended by manufacturer.
6. Anchorage Devices: Powder actuated or screw anchors with sleeves, recommended by manufacturer for anchorage to indicated substrates.
7. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced. Thickness as indicated, or sized to fit stud depth indicated.
8. Acoustic Sealant: Refer to Division 07 Section "Joint Sealants."

D. Isolation Strips: Provide either closed-cell foam tape with rubberized adhesive membrane or asphalt-saturated organic felt (ASTM D226, Type I, No. 15).

2.02 GYPSUM BOARD SUSPENSION SYSTEM

A. For interior overhead gypsum board, in lieu of separate stick built fixed-framing bulkheads and soffits fabricated of Structural Cold-Formed Steel Framing (CFSF-S), Contractor may provide a direct hung suspension system, per ASTM C645, composed of pre-fabricated beams and cross-furring members, specifically designed for use with gypsum board.

B. Products:
1. Armstrong; Quikstix Drywall Grid System.
2. Certainteed; 1-1/2" Drywall Suspension System.
3. Rockfon; Chicago Metallic Drywall Grid System.
4. USG; Drywall Suspension System.

2.03 FABRICATION

A. Fabricate assemblies of framed sections to sizes and profiles required.

B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

A. Install in accordance with ASTM C754. Provide framing, including bracing, bridging, and anchorage accessories, to meet L/240 deflection limit at a lateral pressure of 5 psf unless indicated otherwise.
   1. Gypsum Board: At gypsum board partitions and assemblies, comply with applicable requirements of ASTM C840 for framing installation.
   2. Install a continuous isolation strip where studs or stud-framed partitions directly abut dissimilar metals or exterior masonry wall.

B. Extend partition framing to deck at locations indicated, and to a height 4 inches above ceiling level at all other locations, unless otherwise indicated.

C. Partitions Terminating to Deck: Secure partitions to building structure in accordance with Structural Drawings. Do not fasten runner directly to floor/roof deck; provide clearance for firestopping. Coordinate with Section 078400 - Firestopping for head-of-wall joint firestopping assemblies and firestopping around structural elements as required.

D. Partitions Terminating Above Ceiling: Attach studs to runner using specified mechanical devices in accordance with manufacturer's instructions. Brace runners to structural elements in accordance with Structural Drawings.

E. Align and secure top and bottom runners at maximum 24 inches on center.

F. At partitions indicated with an acoustic rating:
   1. Provide components and install as required to produce STC ratings as indicated, based on published tests by manufacturer conducted in accordance with ASTM E90 with STC rating calculated in accordance with ASTM E413.

G. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.

H. Install studs vertically at 16 inches on center, unless otherwise indicated.

I. Align stud web openings horizontally.

J. Secure studs to tracks using crimping method. Do not weld.

K. Fabricate corners using a minimum of three studs.

L. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.

M. Install bracing, bridging, and anchorage to brace stud framing system rigid.

N. Coordinate erection of studs with requirements of door frames; install supports and attachments.

O. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

P. Blocking: Use FRT wood blocking or metal channel stud blocking, secured to studs. Provide blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, opening frames, and other built-in-place wall mounted items and equipment.

Q. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches.

3.03 GYPSUM BOARD SUSPENSION SYSTEM

A. Install suspension system in accordance with manufacturer's instructions. Do not attach overhead suspension hangers to or suspend from steel floor or roof deck; fasten to primary structural beams/joists or provide intermediate slotted track as supplemental structure between primary structural elements.

3.04 TOLERANCES

A. Maximum Variation From True Position: 1/8 inch in 10 feet.

B. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION 092216

SECTION 092900
GYPSUM BOARD

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units.

C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

D. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.

H. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

I. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.

J. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing.

K. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units.

L. ASTM C1396/C1396M - Standard Specification for Gypsum Board.

M. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels.

N. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

O. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

P. GA-216 - Application and Finishing of Gypsum Panel Products.

1.02 SUBMITTALS

A. Product Data:

1. Provide data on gypsum board, accessories, and joint finishing system.

1.03 DELIVERY, STORAGE, HANDLING, AND FIELD CONDITIONS

A. Do not deliver or install until building is weather-tight and conditioned.

B. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent damage and to prevent marring and soiling of finished surfaces.

C. Do not install gypsum products that have gotten wet or moldy, or show signs of past moisture damage.

D. Maintain uniform temperature and humidity at occupancy conditions during and after installation. Allow products to acclimatize prior to installation.

PART 2 PRODUCTS

2.01 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; with tapered edges.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
      a. Mold-resistant board is required whenever gypsum board is indicated in rooms subject to steam or water, including mechanical rooms, toilet rooms, custodial rooms, and kitchens.
   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: 5/8 inch.
      b. Ceilings: 5/8 inch.
      c. Curved Surfaces: Provide flexible 1/4 inch thickness gypsum board, installed in two layers.

B. Tile Backing Board:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. ANSI Cement-Based Board: Non-gypsum-based; cementitious panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 and ASTM C 1288 or ASTM C1325.
      a. Thickness: 5/8 inch.
      b. Available Products:
         1) FinPan, Inc.; Util-A-Crete Backer Board.
         2) National Gypsum Company; PermaBase Cement Board.
         3) USG Corporation; Durock Cement Board.
         4) Substitutions: See Section 016000 - Product Requirements.

C. Exterior Sheathing Board for Ceilings and Soffits: Sizes to minimize joints in place; ends square cut.
   1. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   2. Fungal Resistance: No fungal growth when tested in accordance with ASTM G21.
   3. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
   4. Edges: Square.
   5. Available Glass Mat Faced Products:
      a. American Gypsum Company; M-Glass Exterior Sheathing.
      b. CertainTeed Corporation; GlasRoc Exterior Sheathing.
      c. Georgia-Pacific Gypsum; DensGlass Sheathing.
      d. National Gypsum Company; Gold Bond eXP Sheathing.
      e. USG Corporation; USG Securock Brand Ultralight Glass-Mat Sheathing.

D. Shaftwall Liner Panels: Type X; 1 inch thick, square long edges, ends square cut.
   1. Glass Mat Faced Type: Glass mat shaftliner gypsum panel or glass mat coreboard gypsum panel as defined in ASTM C1658/C1658M.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

2.02 GYPSUM BOARD ACCESSORIES

A. Sound Attenuation Batts: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness sized to fit metal stud cavity.

B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant. Refer to sealant AS-1 in Division 07 Section "Joint Sealants."

C. Putty Pads: Non-hardening endothermic material, in pad form, faced on both sides with poly liner, designed to seal around penetrations and wiring devices, enhancing acoustic performance.
   1. Nominal Size: 7-1/4 x 7-1/4 x 3/16 inches.
   2. Available Products:
      a. 3M; Fire Barrier Moldable Putty Pads MPP+.
      b. Hilti; Firestop Putty Pad, CFS-P PA.
      c. Specified Technologies, Inc.; SpecSeal Putty Pad.

D. Beads, Joint Accessories, and Other Trim: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
   1. Corner Beads: Low profile, for 90 degree outside corners.
   2. L-Bead, LC-Bead, and U-Bead: Sized to fit gypsum wallboard size(s) indicated.
      a. Provide LC-bead at exposed panel edges and U-bead at concealed panel edges, unless otherwise indicated. Provide L-bead at locations indicated.

E. Decorative Metal Trim:
   1. Material: Extruded aluminum alloy 6063-T5 temper.
   2. Finish: Anodized, clear.
   3. Reveal Trim: Provide 1/2-inch wide by either 1/2-inch or 5/8-inch deep, as standard with manufacturer.
      a. Products:
         1) Fry Reglet; Model DRM-625-50.
         2) Flannery, Inc; Model DWR 625-50.
         3) Gordon, Inc; Part # 512-5/8.
         4) Pittcon Industries; Model SWR-050-063.
         5) Stockton Products
         6) Tamlyn; Model RV5-12.
   4. "F" Reveal Molding: 1/2-inch wide by 5/8-inch deep with 7/8-inch flange on one side only for reveals where drywall terminates against jamb, ceiling, or other finish material.
      a. Products:
         1) Fry Reglet; Model DRMF-625-50.
         2) Flannery, Inc; Model DWRF 625-50.
         3) Gordon, Inc; Part # 412-5/8.
         4) Pittcon Industries; Model SWR-050U-063.
         5) Stockton Products

6) Tamlyn; Model MCR5-12

5. L-Trim Molding: "L" angle molding where drywall raised panel terminates at other substrates.
   a. Products:
      1) Fry Reglet: Model DRML-625.
      2) Flannery, Inc; Model DWL 625.
      3) Gordon, Inc; Part # 258.
      4) Pittcon Industries; Model ST-063.
      5) Stockton Products;
      6) Tamlyn; Model MLR-58.
6. Stepped Outside Corner: Exposed metal reveal profile for 90 degree outside corners.
   a. Products:
      1) Fry Reglet: Model DRMW 625-625.
      2) Flannery, Inc; Model DWRW 625-625.
      3) Gordon, Inc; Part # 945-2X-58.
      4) Pittcon Industries; Model SCS-2X 063-063.
      5) Stockton Products
      6) Tamlyn; (no product - provide custom to match profiles above).

F. Acoustic Partition Closure at Storefront or Curtain Wall: Multi-piece rectangular-section assembly of nested U-shape aluminum extrusions for finished closure between aluminum storefront or curtainwall system vertical mullion (and glass where indicated), and partition assembly. Closure shall allow for movements of framing and glass it attaches to, and shall not allow direct metal to glass contact. Fill cavity of partition closure with acoustic batt insulation.
   1. Thickness: Aluminum closure plates not less than 0.125-inch thick.
   2. Acoustic Rating: Provide product with a minimum tested STC rating of 55.
      a. Acoustic Material: Fungi- and microbe-resistant foam, Class A rated when tester per ASTM E 84.
   3. Acoustical Sealant: Seal both ends of partition closure with acoustical sealant.
   4. Finish: Powder coat; color selected by Architect from manufacturer's full range.
   5. Available Products:
      a. Gordon, Inc; Mullion Mate.
      b. Mull-It-Over Products; Mull-It-Over.

G. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

H. Exterior Soffit Vents: One piece, perforated, ASTM B221 6063 T5 alloy aluminum, with edge suitable for direct application to gypsum board and manufactured especially for soffit application. Provide continuous vent.
   1. Available Manufacturers:
      a. Fry Reglet.
      b. Gordon, Inc.
      c. Pittcon Industries.
      d. Stockton Products.
   2. Flat, horizontal-to-horizontal application: 2-inch wide with three rows of vent slots for a minimum of 3 square inches of opening per linear foot.

3. Finish: High performance organic coating; color selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.

B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Sound Attenuation Batts: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

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. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. 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. Install gypsum board with an open horizontal joint (gap) not to exceed 5/8-inch above finished floor slab, and tape and finish vertical joints to bottom edge of board to afford a smooth substrate for applied wall base.

F. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.

G. Exterior Soffits: Install exterior soffit board perpendicular to framing, with staggered end joints over framing members or other solid backing.

H. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints in compliance with ASTM C 840, consistent with lines of building spaces, and as indicated.
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
   2. At exterior soffits, not more than 30 feet apart in both directions.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

D. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations indicated on drawings. Provide vent area specified.

E. Putty Pads: Install putty pads on the backside of items penetrating gypsum board on STC-rated walls/partitions. Items include, but are not limited to, wiring devices, cable, conduit, and pipe. Completely cover and seal around each penetration.

3.06 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   3. 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. 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 092900

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

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.

F. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.

1.02 SUBMITTALS

A. Shop Drawings: Indicate grid layout and related dimensioning.

B. Product Data: Provide data on suspension system components, acoustical units, and specialty ceiling products as indicated.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Refer to Section 016000 - Product Requirements, for additional provisions.
   2. Extra Acoustical Panels: Quantity equal to 2 percent of total installed, of each type.

D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.03 QUALITY ASSURANCE

A. Source Limitations: Provide each acoustical ceiling assembly (ceiling panel and suspension system) from a single manufacturer to obtain manufacturer's system warranty.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver until building is weather-tight and conditioned.

B. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent damage and to prevent marring and soiling of finished surfaces.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature and humidity at occupancy conditions during and after acoustical unit installation. Allow products to acclimatize prior to installation.

1.06 WARRANTY

A. System Warranty: Provide a single source system warranty covering both acoustical ceiling panels and suspension system.
   1. Warranty shall cover material failures including sag, warping, shrinkage, or delamination, biologic growth including mold or mildew, and rusting of suspension system.
   2. Warranty Period: Minimum 15 years, from date of Substantial Completion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Surface Burning Characteristics: Each acoustical ceiling shall be Class A rated, with flame spread index of 25 or less, smoke developed index of 50 or less, when tested in accordance with ASTM E84.

B. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7, which references applicable requirements of ASTM E580/E580M "Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Subject to Earthquake Ground Motions." for Seismic Design Category indicated on Structural Drawings and complying with local authorities having jurisdiction.

2.02 ACOUSTICAL PANELS

A. Acoustical Panels - General: ASTM E1264, Class A.
   1. VOC Content: Third-party tested and certified, according to California Department of Public Health (CDPH) Standard Method (CA Section 01350).
   2. Antibacterial/Antimicrobial Treatment: Provide acoustical panels that have been factory-treated by manufacturer for resistance to bacteria, mold, mildew, and fungus.
   3. Humidity/Sag Treatment: Provide acoustical panels that have been factory-treated by manufacturer for humidity and sag-resistance.

B. Acoustical Panels ACP-A: Painted mineral fiber, with the following characteristics:
   1. Classification: ASTM E1264, Type A - Mineral Base.
      a. Form: A1.2 - with painted finish, wet formed.
      b. Pattern: "D" - fissured.
   2. Size: 24 by 24 inches.
   3. Thickness: 7/8 inch.
   4. Light Reflectance: Not less than 0.83, determined in accordance with ASTM E1264.
   5. NRC Range: Not less than 0.75, determined in accordance with ASTM E1264.
   6. Ceiling Attenuation Class (CAC): Not less than 35, determined in accordance with ASTM E1264.
   7. Panel Edge: Square.
   8. Color: White.
   9. Suspension System: Exposed grid.
   10. Products:
      a. Armstrong World Industries, Inc; Fine Fissured High NRC - Item #1754.
      b. CertainTeed; Fine Fissured High NRC - Item #HHF-457 HNRCX.
      c. USG Corporation; Radar Open Plan Acoustical Panels - Item #22320.
      d. Substitutions: See Section 016000 - Product Requirements.

C. Acoustical Panels ACP-B: Mineral fiber with vinyl membrane-faced overlay, with the following characteristics:
   1. Classification: ASTM E1264, Type A - Mineral Base.
      a. Form: A1.2 - with painted finish, wet formed.
      b. Pattern: "E" - lightly textured.
   2. Size: 24 by 24 inches.
   3. Thickness: 5/8 inch.
   4. Light Reflectance: Not less than 0.78, determined in accordance with ASTM E1264.

5. Ceiling Attenuation Class (CAC): Not less than 35, determined in accordance with ASTM E1264.
6. Panel Edge: Square.
7. Color: White.
8. Suspension System: Exposed grid.
9. Products:
    a. Armstrong World Industries, Inc; Clean Room VL - Item #868.
    b. CertainTeed Ceilings, Inc; VinylShield C - Item #1172-CRF-1.
    c. USG Corporation; Clean Room Acoustical Panels - Item #56099.
    d. Substitutions: See Section 016000 - Product Requirements.

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
    1. Materials:
        a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
    2. Cross Tee/Main Runner Connection: Override (stepped).
    3. Main Runner End Coupling: Bayonet ("stab") type; knuckle type is not acceptable.

B. Exposed Suspension System, Type ACP-x: Hot-dipped galvanized steel grid with aluminum cap.
    1. High Humidity Applications: Provide in kitchens, rooms with showers, custodial rooms, mechanical rooms, and other rooms where increased corrosion resistance due to humidity or steam is required.
    2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
    3. Coating: Provide minimum G60 hot-dip galvanized coating.
    4. Profile: Tee; 15/16 inch face width.
    5. Finish: Baked enamel.
    6. Color: White.
    7. Products:
        a. Armstrong World Industries, Inc; Prelude Plus XL Fire Guard.
        b. CertainTeed Ceilings, Inc; 15/16" EZ Stab Classic Environmental System.
        c. USG Corporation; Donn Brand ZXLA 15/16 inch Acoustical Suspension System.
        d. Substitutions: See Section 016000 - Product Requirements.

C. Exposed Suspension System, Type ACP-x: Hot-dipped galvanized steel grid and cap.
    1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
    2. Profile: Tee; 15/16 inch face width.
    3. Finish: Baked enamel.
    4. Products:
        a. Armstrong World Industries, Inc; Prelude XL 15/16".
        b. CertainTeed Ceilings, Inc; 15/16" EZ Stab Classic System.
        c. USG Corporation; Donn Brand DX/DXL 15/16 inch Acoustical Suspension System.
        d. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Perimeter Moldings: Same metal and finish as grid.

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 INSTALLATION - SUSPENSION SYSTEM

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

B. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.

1. Use longest practical lengths.
2. Apply acoustical sealant in a continuous bead at top edge of vertical legs of moldings after they are installed.

D. 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.

1. Do not hang suspension system directly from steel floor or roof deck.

E. 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.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

3.04 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 acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

F. Where round obstructions and bullnose concrete block corners occur, provide preformed closures to match perimeter molding.

3.05 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 095100

SECTION 096513
RESILIENT BASE AND ACCESSORIES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

C. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile.

D. ASTM F1861 - Standard Specification for Resilient Wall Base.

E. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

F. ASTM F2169 - Standard Specification for Resilient Stair Treads.

G. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.02 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

C. Verification Samples: Submit in manufacturer's standard size, illustrating color and pattern for each resilient flooring product specified.

1.03 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.

1.04 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.

B. Maintain conditions at occupancy conditions for installation and until Substantial Completion.

PART 2 PRODUCTS

2.01 RESILIENT BASE

A. Resilient Base - RB: ASTM F1861, Type TP, rubber, thermoplastic; Style B, Cove.
   1. Products (Type TP):
      a. Armstrong World Industries, Inc.; Rubber Coved Toe Wall Base.

b. Flexco (USA), Inc.; Flexco Base 2000 - Cove.
c. Johnsonite, a Tarkett Company; Rubber Wall Base - Cove.
d. Mannington Commercial; Burkebase Type TP - Coved.
e. Nora Systems, Inc; nora wall base; Article 820.
f. Roppe Corporation; 700 Series TPR Wall Base - Style B (Coved).
g. Substitutions: See Section 016000 - Product Requirements.

2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
3. Height: 4 inch.
4. Thickness: 0.125 inch minimum.
5. Finish: Satin.
6. Length: Roll; manufacturer's standard length.
7. Color: To be selected by Architect from manufacturer's full range.

2.02 MOLDINGS, TRANSITIONS, AND EDGE STRIPS

A. Moldings, Transition and Edge Strips:
1. Manufacturers:
a. Flexco, Inc.
b. Johnsonite.
c. Mannington Commercial.
d. R.C.A. Rubber Company (The).
e. Roppe Corporation.
f. VPI, LLC; Floor Products Division.
g. Substitutions: See Section 016000 - Product Requirements.
2. Molding/Transition Strip Profiles: Provide in sizes as required to suit flooring thicknesses and applications.
a. Coved edge/cap for carpet.
b. Joiner between carpet and resilient flooring or other materials with different heights.
c. Transition strip between different types of materials that are the same height or between different styles/patterns of the same material.
d. Slim transition strip with approximately 1/4-inch wide visible transition profile.
e. Reducer strip at edges of flooring to reduce height to 0".
f. Subfloor leveling accessory to transition between materials with height differences up to 1/2 inch.
3. Material: Manufacturer's standard rubber or vinyl.
4. Color: To be selected by Architect from manufacturer's full range.

2.03 ACCESSORIES

A. Leveling Compound: Blended cement mix, latex-modified, for use as trowelable underlayment, approved by resilient accessory manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Moisture Vapor Treatment: Where resilient flooring and accessories are installed over concrete slabs, provide alkaline-resistant product designed to control excessive moisture vapor transmission through concrete slab, per the following:

1. Products: Provide product approved by flooring manufacturer and complying with performance requirements below, equivalent to one of the following:
    a. Duraamen Engineered Products, Inc.; Perdure MVT.
    b. Maxxon Corporation; Maxxon MVP.
    c. Tnemec Company Inc.; Epoxoprime MVT, Series 208.
2. Performance Requirements:
    a. Verify with flooring manufacturer that submitted product maintains compliance with all provisions of flooring manufacturer’s warranty.
    b. Low-VOC: Provide product with VOC content less than 15 g/L.
    c. Bond Strength to Concrete: Minimum 400 psi per ASTM D 4541 (100% concrete failure).
    d. Permeance: Maximum 0.1 perm per ASTM E 96, and 0.10 grains/hr/ft^2/in-Hg, per ASTM F3010.
    e. Applications: Provide MVT for all concrete slabs on-grade and lightweight concrete elevated slabs.

D. Floor Polish: Fluid-applied polish recommended by resilient flooring manufacturer.

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. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
    1. Do not apply wall base until other finish items, including casework and painting, are complete.

C. Cementitious Subfloor Surfaces (Stair Treads/Landings): Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
    1. Test as Follows: Perform one of each test in each installation area (each stair).
        a. Alkalinity (pH): ASTM F710, when required by stair accessory manufacturer.
        b. Internal Relative Humidity: ASTM F2170. One test per stair area.
        c. Moisture Vapor Emission: ASTM F1869. One test per stair area.
    2. If test results are not within limits recommended by stair accessory manufacturer, apply moisture vapor treatment (MVT) in accordance with manufacturer's requirements. MVT shall be provided per unit price and quantity allowance requirements.

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 leveling compound to achieve smooth, flat, hard surface.

C. Prohibit traffic until leveling compound is fully cured.

D. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Fit joints and butt seams tightly.
   2. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, install such that molding profiles or transition strips are centered under the door panel.

E. Install edge/reducer strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Resilient Strips: Attach to substrate using adhesive.

3.04 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

C. Job form internal and external corners in accordance with manufacturer's instructions. Form corners by "V" cutting or scribing; do not bend material in a manner that creates stress whitening.

D. In addition to walls, install base on other permanent construction with exposed vertical faces at floor level, including, but not limited to, columns, pilasters, and casework/cabinet knee and toe spaces.

E. Scribe and fit to door frames and other interruptions.

F. At uneven substrate surfaces (such as masonry mortar joints), provide manufacturer's recommended filler sealant or adhesive to fill voids along top of base.

3.05 INSTALLATION - STAIR COVERINGS

A. Install stair coverings in one piece for full width and depth of tread.

B. Install stringers configured tightly to stair profile.

C. Adhere over entire surface. Fit accurately and securely.

D. Clean stair tread and landing accessories and apply floor polish according to manufacturer's written instructions.

3.06 CLEANING

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

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient accessories for 48 hours after installation.

B. Cover resilient accessories and protect from heavy construction traffic and equipment until Substantial Completion.

END OF SECTION 096513

SECTION 096519
RESILIENT TILE FLOORING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

B. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

C. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

1.02 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Shop Drawings: Indicate seaming plans, floor patterns, and dye lot.

C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

1.04 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.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Manufacturer's Warranty: Provide a ten (10) year manufacturer warranty, covering defective material and installation.

C. Installer's Warranty: Installer shall warrant that the products have been installed in accordance with manufacturer's instructions.

1. The installer shall provide a ten (10) year warranty against product failure due to excessive moisture vapor transmission through the slab.

PART 2 PRODUCTS

2.01 RESILIENT TILE FLOORING

A. Vinyl Tile - VT: Printed film type, with transparent or translucent wear layer; acoustic interlayer or backing.
   1. Manufacturers:
      a. American Biltrite; Luxury 500.
      b. Armstrong Flooring; Natural Creations with Diamond 10 Technology.
      c. Dal-Tile Corporation; Luxury Vinyl Flooring.
      d. Mannington Commercial; Amtico Wood.
      e. Roppe Corporation; Health & Learning Vinyl Tile.
      f. Tarkett USA; Contour.

2.02 ACCESSORIES

A. Subfloor Filler: Type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Moisture Vapor Treatment: Where resilient flooring and accessories are installed over concrete slabs, and where field testing indicates high moisture vapor testing through concrete slabs, provide alkaline-resistant product designed to control excessive moisture vapor transmission through concrete slab in accordance with Division 01 MVT allowance and unit price, and per the following:
   1. Products: Provide product approved by flooring manufacturer and complying with performance requirements below, equivalent to one of the following:
      a. Duraamen Engineered Products, Inc.; Perdure MVT.
      b. Maxxon Corporation; Maxxon MVP.
      c. Tnemec Company Inc.; Epoxoprime MVT, Series 208.
   2. Performance Requirements:
      a. Verify with flooring manufacturer that submitted product maintains compliance with all provisions of flooring manufacturer’s warranty.
      b. Low-VOC: Provide product with VOC content less than 15 g/L.
      c. Bond Strength to Concrete: Minimum 400 psi per ASTM D 4541 (100% concrete failure).
      d. Permeance: Maximum 0.1 perm per ASTM E 96, and 0.10 grains/hr/ft^2/in-Hg, per ASTM F3010.
      e. Applications: Provide MVT for all concrete slabs on-grade and lightweight concrete elevated slabs.

D. Floor Polish: Fluid-applied polish recommended by resilient flooring manufacturer.

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 as Follows: Perform one of each test per 1,000 sf of installation area.
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   2. If test results are not within limits recommended by flooring manufacturer, apply moisture vapor treatment (MVT) in accordance with manufacturer's requirements. MVT shall be provided per unit price and quantity allowance requirements.

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.

D. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Fit joints and butt seams tightly.
   2. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 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. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern, unless otherwise indicated.

3.05 CLEANING

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

B. Clean in accordance with manufacturer's written instructions.

C. Polish: Apply not less than three coats of floor polish. Provide additional coats as required to comply with manufacturer's recommendations.

3.06 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION 096519

SECTION 096813
TILE CARPETING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

E. ILFI (DEC) - International Living Future Institute ‘Declare’ Program.

F. CRI (GLP) - Green Label Plus Testing Program - Certified Products.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Substitutions/Prequalification: Manufacturers seeking consideration to bid their product as an acceptable alternative shall provide full product data and full range of selection samples during the bid period. Products that do not meet the technical and aesthetic criteria will not be accepted. No substitutions shall be permitted for carpet tile after receipt of bids.

1.03 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

B. Shop Drawings: Indicate layout of joints, direction of carpet pile, dye lot, and location of edge moldings and transition strips.
   1. Where multiple carpet tile products are specified (including multiple products in a single space installed in an indicated pattern), indicate on the shop drawings the locations where each product is being installed.

C. Selection Samples: Submit manufacturer's color charts indicating full range of colors for carpet tiles and for accessories.

D. Verification Sample: Submit full size sample for each required color, pattern, and texture.
   1. Submit samples in manufacturer's standard size for each accessory product.

E. Sustainable Design Submittal: Submit VOC content documentation for adhesives.

F. Sustainable Design Submittal: Submit a copy of ILFI (DEC) Declare Label for each product.

G. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
   1. Include specific procedures and materials that are not recommended, including those that may be harmful to carpet tile or that would void warranty.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.04 QUALITY ASSURANCE

A. Critical Radiant Flux: All carpet tiles shall be Class I rated, with a minimum CRF of 0.45 watts/sq cm, when tested by an independent testing agency in accordance with ASTM E648 or NFPA 253.

1.05 FIELD CONDITIONS, STORAGE AND HANDLING

A. Comply with the Carpet and Rug Institute (CRI) Publication "CRI 104 - Standard for Installation of Commercial Carpet." Comply with Section 4.0 for storage and handling, Section 7.0 for ambient temperature and ventilation, and Section 9.0 for Product Acclimation.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Carpet Tile Warranty: Provide a ten (10) year manufacturer warranty, covering defective material and faulty installation.

1. Warranty shall cover excessive surface wear (defined as more than 10% loss by weight of face fiber), edge raveling, backing separation, shrinking, stretching, cupping, doming, static electricity, or color loss or fading.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile Carpeting: Provide the basis-of-design carpet tiles or a prequalified alternate tile. No substitutions will be considered after the award of Contract.

2.02 MATERIALS

A. Tile Carpeting, Type C-TILE: Tufted, manufactured in one color dye lot.

1. Product: _____ manufactured by _____.
2. Tile Size: 24 by 24 inch, nominal.
    a. Fiber: Type 6,6 nylon or approved Type 6 cationic nylon.
3. Critical Radiant Flux: Minimum of 0.45 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
4. Sustainability Requirement: Provide ILFI (DEC) certified Red-List Free product.
5. VOC Content: Provide CRI (GLP) certified product; in lieu of labeling, independent test report showing compliance is acceptable.
6. Primary Backing Material: Manufacturer's standard; recycled vinyl with fiberglass reinforcing.

2.03 ACCESSORIES

A. Subfloor Filler: Type recommended by flooring material manufacturer.

B. Edge Strips: Rubber, color as selected by Architect.

C. Moisture Vapor Treatment: Where carpeting and accessories are installed over concrete slabs, provide alkaline-resistant product designed to control excessive moisture vapor transmission through concrete slab, per the following:

1. Products: Provide product approved by flooring manufacturer and complying with performance requirements below, equivalent to one of the following:
    a. Duraamen Engineered Products, Inc.; Perdure MVT.
    b. Maxxon Corporation; Maxxon MVP.

c. Tnemec Company Inc.; Epoxoprime MVT, Series 208.

2. Performance Requirements:
   a. Verify with flooring manufacturer that submitted product maintains compliance with all provisions of flooring manufacturer’s warranty.
   b. Low-VOC: Provide product with VOC content less than 15 g/L.
   c. Bond Strength to Concrete: Minimum 400 psi per ASTM D 4541 (100% concrete failure).
   d. Permeance: Maximum 0.1 perm per ASTM E 96, and 0.10 grains/hr/ft^2/in-Hg, per ASTM F3010.
   e. Applications: Provide MVT for all concrete slabs on-grade and lightweight concrete elevated slabs.

D. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

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 subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
   1. Test as Follows: Perform one of each test per 1,000 sf of installation area.
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   2. If test results are not within limits recommended by flooring manufacturer, apply moisture vapor treatment (MVT) in accordance with manufacturer's requirements. MVT shall be provided per unit price and quantity allowance requirements.

D. 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 or local low spots, cracks, joints, holes, and other defects with subfloor filler.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install carpet tile in accordance with manufacturer's instructions and CRI 104 (Commercial).

C. To ensure minimal color variation, ensure that each space/room uses only carpet from the same dye lot.

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, unless otherwise indicated.

F. Locate change of color or pattern between rooms or at transitions to other finish flooring material directly under the door leaf centerlines, or at the center of cased openings.

G. Fully adhere carpet tile to substrate.

H. Install carpet tile into wall recesses, knee spaces under cabinets or countertops, closets, and other similar spaces.

I. Trim carpet tile neatly at walls and around interruptions.

J. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING AND PROTECTION

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

B. Clean and vacuum carpet surfaces.

C. Protect installed carpet in accordance with CRI 104, Section 13.7 "Post Installation."

END OF SECTION 096813

SECTION 096817
TEXTILE COMPOSITE FLOORING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. AATCC Test Method 16 - Colorfastness to Light.

B. AATCC Test Method 134 - Test Method for Electrostatic Propensity of Carpets.

C. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.

D. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

E. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

G. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

H. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

I. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

J. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

K. SCAQMD 1168 - Adhesive and Sealant Applications.

1.02 DEFINITION

A. Textile Composite Flooring: A hybrid floor covering consisting of a tufted loop nylon or polyester fiber wear layer thermally fused to a cushioned polyester backing, commonly referred to as textile composite flooring (TCF), vinyl cushion tufted textile (VCTT), or tufted textile flooring.

1.03 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

B. Shop Drawings: Showing the extent of installation, seam direction of TCF, and accessories. Check pattern match, if any, for matching during installation and possible waste factors in ordering required amounts. Show TCF dye lot. Indicate built in items such as casework, columns, and doorways, and locations where cutouts are required in TCF.

1. Maintain a copy of approved shop drawings on site during installation, available for review by Owner and Architect.

C. Selection Samples: Submit manufacturer's standard color charts illustrating color and pattern design for each TCF product specified.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra TCF Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed, but not less than 10 square yards.

I. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified textile composite flooring. Manufacturer shall have a technical field representative available for field observation and inspection.

B. Installer Qualifications: Company specializing in installing textile composite flooring, and complying with following:
   1. Installer shall be a specialty contractor normally engaged in the installation of TCF flooring, with prior experience installing these floor materials. Flooring contractor shall submit a list of installers certified by TCF manufacturer prior to bid.
   2. Flooring contractor shall be responsible for proper product installation, including floor substrate testing and preparation, in accordance with manufacturer's requirements and specifications.

1.05 FIELD CONDITIONS

A. Do not deliver or install until building is enclosed and HVAC system is operating at occupancy conditions.

B. Store materials in area of installation for minimum period of 24 hours prior to installation.

1.06 WARRANTY

A. Manufacturer's Warranty: The TCF warranty shall be the sole source responsibility of the manufacturer. Second source warranties or warranties that involve parties other than the TCF manufacturer are unacceptable.
   1. Warranty Term: 10 years minimum.
   2. In the event of failure due to material or workmanship, the warranty shall cover either repair or removal and replacement at manufacturer's discretion.
   3. The warranty shall not exclude TCF installed on stairs, provided the product installation was approved by manufacturer's field representative during final inspection, and provide the product was properly maintained.
   4. Wear Layer Warranty: Shall specifically define and cover against the following:
      a. Product performance.
      b. Colorfastness to light and crocking.
      c. Stain removal.
      d. Static protection.
      e. Zippering.
   5. Backing Layer Warranty: Shall specifically define and cover against the following:
      a. Edge ravel.
      b. Delamination.
      c. Dimensional stability.

6. A 'tuft bind' warranty in lieu of edge ravel and zippering is not acceptable.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Textile Composite Flooring ("TCF"):
   1. J&J Flooring Group, Inc.; Kinetex.
   2. Tandus Centiva; Powerbond Hybrid Resilient.
   3. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE CHARACTERISTICS

A. The following performance characteristics shall be met by all products:
   1. Critical Radiant Flux: Minimum of 0.45 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
   2. Surface Flammability Ignition: Pass Federal Flammability CPSC FF 1-70 (also referenced as ASTM D2859 - the "pill test").
   3. Maximum Electrostatic Charge: Pass AATCC Test Method 134 (Step & Scuff): 3 Kv. or less at 20 percent relative humidity.
   4. Smoke Density: ASTM E662 / NFPA 258: < 450 Flaming Mode.
   5. Static Coefficient of Friction: ASTM C1028: Passes ADA Guidelines for Accessible Routes (Minimum 0.60).
   6. Delamination of Secondary Backing of Pile Floor Coverings: ASTM D3936: Minimum 15 lbs.
   7. Lightfastness: AATCC Test Method 16: > 4 @ 100 hours.
   8. Vetterman Drum: ASTM D5417: Minimum 3 @ 22,000 cycles.
   9. Seam Integrity: Seam to remain intact after 50,000 cycles per Phillips Chair Test.

B. Low-Emitting Materials:
   1. Flooring Products: Flooring products shall be tested and determined compliant in accordance with CAL (CDPH SM).
   2. Adhesives and Sealants: Adhesives and sealants field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.03 MATERIALS

A. Textile Composite Flooring, Type TCF-A: Tufted or flocked, manufactured in one color dye lot.
   1. Product: _____ manufactured by _____.
   2. Tile Size: 24 by 24 inch, nominal.
   3. Color: _____.
   4. Wear Layer: Manufacturer's standard, polyester or nylon.
   5. Primary Backing Material: 100% Polyester felt cushion.

2.04 ACCESSORIES

A. Subfloor Filler: Type recommended by flooring material manufacturer.

B. Edge Strips: Embossed aluminum, color as selected by Architect.

C. Moisture Vapor Treatment: Where textile composite floor and accessories are installed over concrete slabs, provide alkaline-resistant product designed to control excessive moisture vapor transmission through concrete slab, per the following:
   1. Products: Provide product approved by flooring manufacturer and complying with performance requirements below, equivalent to one of the following:
      a. Duraamen Engineered Products, Inc.; Perdure MVT.
      b. Maxxon Corporation; Maxxon MVP.
      c. Tnemec Company Inc.; Epoxoprime MVT, Series 208.
   2. Performance Requirements:
      a. Verify with flooring manufacturer that submitted product maintains compliance with all provisions of flooring manufacturer’s warranty.
      b. Low-VOC: Provide product with VOC content less than 15 g/L.
      c. Bond Strength to Concrete: Minimum 400 psi per ASTM D 4541 (100% concrete failure).
      d. Permeance: Maximum 0.1 perm per ASTM E 96, and 0.10 grains/hr/ft^2/in-Hg, per ASTM F3010.
      e. Applications: Provide MVT for all concrete slabs on-grade and lightweight concrete elevated slabs.

D. Adhesive: Recommended by textile composite flooring manufacturer; releasable type.

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 textile composite flooring.

B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
   1. Test as Follows: Perform one of each test per 1,000 sf of installation area.
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   2. After testing is complete, prepare concrete and install moisture vapor treatment (MVT) in accordance with manufacturer's written instructions. If testing indicates measurements are within acceptable levels for flooring installation with the need for MVT, the MVT may be omitted where approved by the Architect.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

C. Apply moisture vapor treatment (MVT) in accordance with manufacturer's instructions.

D. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install TCF in accordance with manufacturer's instructions.

C. Cut TCF tile clean. Fit TCF tight to intersection with vertical surfaces without gaps.

D. Lay TCF tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.

E. To ensure minimal color variation, ensure that each space/room uses only carpet from the same dye lot.

F. Locate change of color or pattern or transition trim between rooms under door centerline.

G. Fully adhere TCF tile to substrate.
   1. Free-lay and stretch-in installations are not acceptable.

H. Trim TCF neatly at walls and around interruptions.

I. Complete installation of edge strips, concealing exposed edges.

3.04 FIELD QUALITY CONTROL

A. Engage manufacturer's technical field representative to observe during substrate preparation and during installation, and to provide a final inspection after completion.

B. Remove and replace TCF where manufacturer's field inspection indicates that installation is not in compliance with the specified requirements or with manufacturer's instructions.

3.05 CLEANING AND PROTECTION

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

B. Clean and vacuum TCF surfaces.

C. Protect installed TCF from heavy construction traffic, soiling, and damage for the remainder of the construction period.

END OF SECTION 096817

SECTION 099100
PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior and interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated. Specific items include (but are not limited to) the following:

1. Fire- and Smoke-Rated Wall Identification: Permanently label fire- and smoke-rated walls, partitions, and barriers per requirements of applicable building code. Labeling shall include fire-resistance rating, type of assembly, and instruction to protect openings/penetrations. Example text: "ONE HOUR FIRE BARRIER - PROTECT ALL OPENINGS".
    a. Locate lettering in concealed accessible floor, floor-ceiling plenums, and attic spaces, located no more than 15 feet from end of wall and at horizontal intervals not exceeding 30 feet, with stenciled lettering not less than 3 inches high with minimum 3/8-inch strokes. Locate directly inside of access doors or panels that provide access to rated walls. Do not paint walls where exposed to view except in support spaces (mechanical / electrical rooms and similar spaces).
    b. Refer to the life safety plans and partition schedule on the drawings for rated wall and partition locations.
2. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
3. Elevator pit ladders.
4. Prime surfaces to receive wall coverings.
5. Mechanical and Electrical:
    a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
    b. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
    c. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
6. Shop-Primed Items: In finished areas, paint shop-primed items. Unless specifically indicated that additional field primer is not required, provide a tie coat primer over the shop primer before top coat(s) are applied.

D. Do Not Paint or Finish the Following Items:

1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.

6. Marble, granite, slate, and other natural stones.
7. Floors, unless specifically indicated.
8. Ceramic and other tiles.
9. Brick, architectural concrete, architectural precast, cast stone, and integrally colored plaster, fiberglass, or stucco.
10. Glass.
11. Acoustical materials, unless specifically indicated.
12. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual.

C. SSPC-SP 1 - Solvent Cleaning.

D. SSPC-SP 6 - Commercial Blast Cleaning.

1.03 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paints:
   1. Benjamin Moore.
   2. PPG Paints.
   3. Sherwin-Williams Company.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each paint material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Low-Emitting Materials (Paints and Coatings): Paints and coatings field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet applicable VOC limits of CARB (SCM) or SCAQMD 1113.

2.03 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
   1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

G. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.

H. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

I. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

J. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

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

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.06 EXTERIOR PAINT SCHEDULE

A. General: Provide the following Paint systems for the various substrates, as indicated. Dry film thickness is noted as “DFT.” Provide compatibility test areas on existing painted substrates.

B. Zinc-Coated or Zinc-rich Primer-Coated Metal with Direct to Metal (“DTM”) Gloss Acrylic Enamel Finish: 2 topcoats of DTM gloss enamel over primer, with min. total DFT of 2.5 mils.
   1. Prime Coat (Tie-Coat): Lead-free, acrylic base interior/exterior galvanized metal primer, premium grade. Apply over shop primer.
      a. Moore: HP04 Ultra Spec HP Acrylic Metal Primer.
      b. PPG: 90-1908 Pitt-Tech Plus EP Acrylic Primer/Finish.
      c. S-W: B66W1310 Pro Industrial Pro-Cryl Universal Acrylic Primer.
   2. First and Second Coats: DTM Acrylic Gloss Enamel.
      a. Moore: HP28 Ultra Spec HP Acrylic Gloss Enamel.
      b. PPG: 90-1510 Pitt-Tech Plus EP DTM Acrylic Gloss.
      c. S-W: B66W1051 Pro Industrial DTM Acrylic Coating (Gloss).

C. Field-Applied Coatings for Ferrous Metal (AESS): Aliphatic urethane system of intermediate coat and topcoat. Provide scheduled products for exposed steel fabrications indicated as AESS.
   1. Field Touch-up: Match moisture curing urethane zinc-rich shop primer.
   2. Intermediate Coat: Moisture curing urethane and micaceous iron oxide or epoxy.
      a. Moore: Corotech V160 Epoxy Mastic Coating.
      b. PPG: PMC Amerlock 600.
      c. S-W: Macropoxy 646 Fast Cure Epoxy, B58-600/B58v600.
   3. Top Coat: Aliphatic urethane at 2.0 – 3.0 mils DFT.
      a. Moore: Corotech V500 Aliphatic Acrylic Urethane.
      b. PPG: 95-812 Pitthane Ultra Gloss Urethane Enamel.
      c. S-W: Corothane I Aliphatic Finish Coat B65.

D. Coatings to Repaint Exterior Ferrous Metal: Aliphatic urethane topcoat system over surface-tolerant epoxy mastic. Provide to repaint existing exposed steel fabrications with extended weather exposure deterioration and surface rust.
   1. Preparation: Clean steel to SSPC SP-3 Power Tool Cleaning to remove all rust scale, mill scale and loose rust, oil, grease and other contaminants.
   2. Primer: Surface-tolerant fast curing polyamide epoxy (mastic). 5.0 – 10.0 mils DFT.
      a. Moore: P45 Mastic Epoxy Gloss Coating.
      b. PPG: PMC Amerlock 600.
      c. S-W: Macropoxy 646 Fast Cure Epoxy.
   3. First and Second Top Coats: Aliphatic urethane at 3.0 – 4.0 mils DFT per coat
      a. Moore: P74 Aliphatic Acrylic Urethane.
      b. PPG: 95-8930 Pitthane Ultra LS.
      c. S-W: B65-300 Series / B60V30 Hi-Solids Polyurethane.

E. Concrete: Acrylic latex satin finish, two finish coats over alkali-resistant primer with minimum total DFT of not less than 3.5 mils.
   1. Prime Coat: Exterior Acrylic weathered masonry sealer/primer.
      a. Moore: 608 Ultra Spec Masonry Int/Ext 100% Acrylic Sealer/Primer.
      b. PPG: 4-603 Perma-Crete Int/Ext Alkali Resistant Primer.

c. S-W: A24w8300, Loxon Concrete & Masonry Primer.

2. First and Second Finish Coats: Exterior 100% Acrylic – Satin sheen; premium grade.
   a. Moore: N401 Regal Select Exterior Paint High Build Low Lustre Finish.
   b. PPG: 76-45 Sun-Proof Ext House & Trim, Satin.
   c. S-W: A82 Series A-100 Exterior Latex Satin.

F. Concrete Masonry Units: Acrylic latex satin finish, two finish coats over primer with minimum total DFT of not less than 3.5 mils.
   1. Prime Coat: Exterior Acrylic weathered masonry sealer/primer.
      a. Moore: 571 Ultra Spec Hi-Build Masonry Block Filler.
      b. PPG: 6-15 Speedhide Int/Ext Acrylic Masonry Block Filler.
      c. S-W: A24W200 Loxon Block Surfacer.
   2. First and Second Finish Coats: Exterior 100% Acrylic – Satin sheen; premium grade.
      a. Moore: N401 Regal Select Exterior Paint High Build Low Lustre Finish.
      b. PPG: 76-45 Sun-Proof Ext House & Trim, Satin.
      c. S-W: A 82 Series A-100 Exterior Latex Satin.

G. Exterior Gypsum Soffit Board with Smooth Finish 100% Acrylic Coating: Top coat(s) for total DFT of 10.0 mils minimum over primer-sealer.
   1. Prime Coat (Tie-Coat): Bonding primer-sealer.
      a. Moore: N023 Fresh Start All Purpose 100% Acrylic Int/Ex Latex Primer.
      b. PPG: 17-921 Seal-Grip Gripper Interior/Exterior 100% Acrylic Latex Primer.
      c. S-W: B51-450, Multi-Purpose Primer.
   2. First and Second Finish Coats: Exterior 100% Acrylic – Flat finish; premium grade.
      a. Moore: N400 Regal Select Exterior Paint High Build Flat Finish.
      b. PPG: 72-45 Sun-Proof Ext House & Trim. Flat Latex 100% Acrylic
      c. S-W: A6 Series A-100 Exterior Latex Flat

H. General Painted Wood and Plywood with Acrylic Latex Satin Finish: 2 finish coats over primer with total DFT not less than 3.5 mils.
   1. Prime Coat: Alkyd-based wood sealer/primer.
      a. Ben Moore: 024 Fresh Start Multi-Purpose Oil Based Primer.
      b. PPG: 17-941 Seal-Grip Interior/Exterior Alkyd Universal Primer.
      c. S-W: Y24W8020 Exterior Oil Wood Primer.
   2. First and Second Finish Coats: Exterior 100% Acrylic – Satin sheen; premium grade.
      a. Moore: N401 Regal Select Exterior Paint High Build Low Lustre Finish.
      b. PPG: 76-45 Sun-Proof Ext House & Trim, Satin.
      c. S-W: A82 Series A-100 Exterior Latex Satin.

3.07 INTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated. Dry film thickness is noted as “DFT.” Provide compatibility test areas on existing painted substrates.

B. Concrete Masonry Units: Low-VOC Acrylic Satin Finish. 2 Coats over filler, with total DFT not less than 2.5 mils. (Provide for CMU except where “epoxy finish” is indicated.)
   1. Filler Coat, 100% Acrylic. Apply filler coat at a rate to ensure complete coverage. Brush, spray or roller apply and back roll or squeegee for smooth, pinhole-free treatment.
      a. Moore: 571 Ultra Spec Hi-Build Masonry Block Filler.

b. PPG: 16-90 Pitt Glaze WB Acrylic Interior Exterior Block Filler.
c. S-W: B46W150 Pro Industrial Heavy Duty Block Filler. (PrepRite not acceptable)

2. Waterproofing Filler Coat – Showers & Wet Applications: Cementitious resin or epoxy block filler applied by brush, spray or roller and back rolled or squeegeed for smooth, pinhole-free treatment.
   a. Moore: P31 Waterborne Epoxy Block filler.
   b. PPG: 95-217 Epoxy Ester Cementitious Waterproofing Block Filler.
   c. S-W: B42W400/B42V401 Kem Cati-Coat HS Epoxy Filler/Sealer.
3. Bonding Primer (previously painted): Acrylic bonding primer for exceptional adhesion to hard, glossy surfaces. Test for adhesion. Brush, spray or roller apply and back roll.
   a. Moore: Stix Bonding Primer.
   b. PPG: 17-921 PPG Seal Grip Acrylic Universal Primer/Sealer.
   c. S-W: B51W150 Extreme Bond Interior/Exterior Primer.
4. First & Second Finish Coats: Commercial Interior Low-VOC Acrylic Satin Finish. Provide for wall finishes unless directed otherwise.
   a. Moore: N538 Ultra Spec 500 Interior Eggshell Finish.
   b. PPG: 6-411ZV Speedhide Interior Eggshell Latex.
   c. S-W: B20-12650 ProMar 200 Zero VOC Interior Latex Eg-Shel.

C. Concrete Masonry Units - Semi-Gloss Water-Borne Epoxy Finish: 2 Coats over filler:
1. Block Filler Coat: Acrylic-latex or as required by manufacturer for topcoat. Brush, spray or roller apply and back roll for smooth pinhole-free treatment.
   a. Moore: 571 Ultra Spec Hi-Build Masonry Block Filler.
   b. PPG: 6-15 Speedhide Int/Ext Acrylic Masonry Block Filler.
   c. PPG: 16-90 Pitt-Glaze WB Int/Ext Block Filler Latex.
   d. S-W: B46W150 Pro Industrial Heavy Duty Block Filler.
2. First and Second Coats: Two-component, semi-gloss water born polyamide epoxy enamel applied at a DFT of 1.5 to 4.0 mils per coat.
   a. Moore: Corotech V400 Polyamide Epoxy Coating.
   b. PPG: 98E-xx Base / 98E-100 Aquapon WB EP Water Based Epoxy – Semi-Gloss.
   c. S-W: B73W360 / B73V300 Pro Industrial Water Based Catalyzed Epoxy.

D. Concrete Floor with Semi-Gloss Water-Base Acrylic Floor Enamel: 2 Coats over primer on cured surface. Concrete must cure a minimum of 30 days before painting and have pH of 10.0 or lower. Prepare per SSPC-SP13, shot blast or prepare floor by other means acceptable to paint manufacturer (accepted in writing) prior to painting.
1. Primer Coat: Acrylic, self-priming finish enamel; brush or roller applied over prepared concrete.
   a. Moore: 122 Moore's Latex Floor and Patio Enamel (thinned 1 pint/gallon).
   b. PPG: 3-510 Pittsburgh Floor, Porch & Deck Satin Latex.
   c. S-W: B90 Armorseal Tread-Plex.
2. First and Second Finish Coats: Semi-gloss water-based acrylic floor enamel or comparable performance enamel. Provide 1.5 - 2.0 mils DFT per coat.
   a. Moore: 122 Moore’s Latex Floor and Patio Enamel.
   b. PPG: 3-510 Pittsburgh Floor, Porch & Deck Satin Latex.
   c. S-W: B90 Armorseal Tread-Plex.

E. Concrete Floor with Gloss Water-Base Epoxy Floor Enamel: 2 Coats over primer on cured surface. Concrete must cure a minimum of 30 days before painting and have pH of 10.0 or lower. Prepare per SSPC-SP13, shot blast or prepare floor by other means acceptable to paint manufacturer (accepted in writing) prior to painting.
   1. Primer Coat: Epoxy primer, brush or roller applied over prepared concrete. Provide 1.5 - 2.0 mils DFT per coat or as recommended by manufacturer.
      a. Moore: P41 Fast Dry Epoxy Floor Sealer/Finish.
      b. PPG: 98E-1 Series Aquapon WB EP Water Base Epoxy 2.0 mils to 3.0 mils DFT per coat.
      c. S-W: B70-8100/B70V8100 Armorseal 8100 Water based Epoxy Floor Coating.
   2. Two Finish Coats: Two-component waterborne catalyzed polyamide epoxy floor enamel or comparable performance enamel. Provide 1.5 - 2.0 mils DFT per coat or as recommended by manufacturer.
      a. Moore: P42 Waterborne Polyamide High Gloss Epoxy Enamel 2.0 mils to 3.0 mils DFT per coat.
      b. PPG: 98E-1 Series Aquapon WB EP Water Base Epoxy 2.0 mils to 3.0 mils DFT per coat.
      c. S-W: B70-8100/B70V8100 Armorseal 8100 Water based Epoxy Floor Coating.

F. Gypsum Board Systems with Latex Finish: Satin (egg-shell) finish at walls and flat finish on ceilings except as indicated otherwise. Provide best commercial Zero-VOC formulation with 0 VOC per EPA test method 24.
   1. Filler Coat: 0 VOC (per EPS test method 24) Latex Primer.
      a. Moore: N534 Ultra Spec 500 Interior Latex Primer.
      b. PPG: 9-900 Pure Performance Interior Latex Primer.
      c. S-W: B28-2600 ProMar 200 Zero VOC Interior Latex Primer.
   2. First & Second Finish Coats: Interior Zero-VOC Acrylic Satin Finish. (Low lustre/Satin = 25-45% @60°) Provide for wall finishes unless indicated otherwise.
      a. Moore: N538 Ultra Spec 500 Interior Eggshell.
      b. PPG: 6-411ZV Speedhide Interior Eggshell Latex.
      c. S-W: B20-12650 ProMar 200 Zero VOC Interior Latex Eg-Shel.
   3. First & Second Finish Coats: Interior Zero-VOC Acrylic Flat Finish. Provide for ceiling applications unless indicated otherwise.
      a. Moore: N536 Ultra Spec 500 Interior Flat.
      b. PPG: 6-70ZV Speedhide Interior Latex Flat.
      c. S-W: B30-2600 ProMar 200 Zero VOC Interior Latex Flat or B30-4650 ProMar 400 Zero VOC Interior Latex Flat.

G. Gypsum Board Systems with Water-Borne Polyamide Epoxy Finish (“EPX”):
   1. Filler Coat: Manufacturer’s recommended primer.
      a. Moore: 217 Fresh Start Alkyd Enamel Underbody.
      b. PPG: 6-2 Speedhide Interior Latex Sealer.
      c. S-W: B28W2600 ProMar 200 Zero VOC Primer.
   2. First and Second Coats: Two-component, water born polyamide epoxy enamel applied at a DFT of 1.5 to 4.0 mils per coat. Provide semi-gloss finish unless directed otherwise.
      a. Moore: Corotech V440 Waterborne Amine Epoxy.
      b. PPG: 98E-xx Base / 98E-100 Aquapon WB EP Water Based Epoxy – Semi-Gloss.
      c. S-W: B73W360 / B73V300 Water Based Catalyzed Epoxy.

H. Ferrous Metal with Latex Dry Fog Finish: One finish coat over primed exposed construction. Provide nominal 50 square foot sample area to test for paint compatibility with substrates.
   1. Prime Coat: (Acrylic or recommended VOC-compliant metal primer for surfaces not pre-primed.) 2.0 mils DFT.
      a. Moore: N110 Superkote 5000 DryFall Latex Flat.
      b. PPG: 90-1908 Pitt-Tech Plus EP Acrylic Primer/Finish.
      c. S-W: B66-1300 Series Pro Industrial Pro-Cryl Universal Acrylic Primer.
   2. Top Coat: All exposed structure as scheduled. Acrylic Dry Fog 3.0 mils DFT. Provide color finish as selected by Architect from manufacturer's full range.
      a. Moore: N110 Superkote 5000 DryFall Latex Flat.
      b. PPG: 6-725XI Speedhide Super Tech WB Int. Dry-Fog Flat Latex Flat.
      c. S-W: B42W1181 / B42B81 Waterborne Acrylic Dry Fall, Flat.

I. Ferrous Metal: Direct to Metal (“DTM”) Acrylic Enamel Finish: 2 Coats over primer, with total DFT not less than 2.5 mils. Provide satin finish at hollow metal steel doors and frames, and semi-gloss at other applications.
   1. Prime Coat: Lead-free, acrylic base primer. Not required on shop primed items.
      a. Moore: HP29 Ultra Spec HP DTM Acrylic Semi-Gloss.
      b. PPG: 90-1908 Pitt-Tech Plus EP Acrylic Primer/Finish.
      c. S-W: B66W11 Pro Industrial DTM Acrylic Primer/Finish (or B66 W200).
   2. Bonding Primer (previously painted): Acrylic bonding primer designed for previously painted ferrous metal to ensure secure bond. Brush, spray or roller apply and back roll.
      a. Moore: SXA-110 Insl-X Waterborne Bonding Primer.
      b. PPG: 90-1908 Pitt-Tech Plus EP Acrylic Primer/Finish.
      c. S-W: B66A50 DTM Bonding Primer.
   3. First and Second Coat: DTM Acrylic Semi-Gloss Enamel. (30-40 units @ 60°)
      a. Moore: HP29 Ultra Spec HP DTM Acrylic Semi-Gloss.
      b. PPG: 90-1610 Pitt-Tech Plus EP DTM Acrylic Semi-Gloss.
      c. S-W: B66W1151 Pro Industrial DTM Acrylic Semi-Gloss Coating.
   4. First and Second Coat: DTM Acrylic Satin Enamel. Provide for hollow metal steel doors and frames. (15-25 units @ 60°)
      a. Moore: HP25 Ultra Spec HP DTM Acrylic Low Lustre.
      b. PPG: 90-1710 Pitt-Tech Plus EP DTM Acrylic Satin.
      c. S-W: B66W1251 Pro Industrial DTM Acrylic Eg-Shel.

J. Zinc-Coated Metal: Semi-Gloss Direct to Metal (“DTM”) Acrylic Enamel Finish: 2 Coats over primer, with min. total DFT of 2.5 mils.
   1. Prime Coat: Lead-free, acrylic base interior galvanized metal primer, premium grade.
      a. Moore: HP04 Ultra Spec HP Acrylic Metal Primer.
      b. PPG: 90-1908 Pitt-Tech Plus EP Acrylic Primer/Finish.
      c. S-W: B66W1151 Pro Industrial DTM Acrylic Semi-Gloss Coating.
   2. First and Second Coats: DTM Acrylic Semi-Gloss Enamel. Same as for ferrous metal.

K. Intumescent Mastic-Coated Metal: Semi-Gloss Direct to Metal (“DTM”) Acrylic Enamel Finish as approved by intumescent coating manufacturer: 2 Coats, with min. total DFT of 2.5 mils.

L. Painted Woodwork and Hardboard: Semi-Gloss Acrylic Enamel Finish: Two topcoats over undercoater. Provide at painted wood shelving, electrical panel boards, and as noted.
   1. Prime Coat: Interior Oil Undercoat.

a. Moore: 024 Fresh Start Multi-Purpose Interior/Exterior Oil Based Primer.
b. PPG: 17-941NF Seal Grip Int/Ext. Alkyd Universal Primer.
c. S-W: B49 W8820 Multi-Purpose Oil-Based Primer.

2. Prime Coat: Interior Latex Undercoat, for medium-duty, low-VOC formulation.
   a. Moore: N023 Fresh Start Multi-Purpose Latex Primer.
   b. PPG: 17-921 Seal Grip Int/Ext Acrylic Universal Primer.
   c. S-W: B28 W811 Premium Wall & Wood Primer.
3. First and Second Finish Coats: DTM Acrylic Semi-Gloss Enamel. DFT 3.5 Mils min.
   a. Moore: HP29 Ultra Spec DTM Acrylic Semi-Gloss.
   b. PPG: 90-1110 Pitt-Tech Int/Ext Satin DTM Industrial Enamel.
   c. S-W: B66W1150 Series Pro Industrial DTM Acrylic Semi-Gloss Coating.
4. First and Second Finish Coats: Premium Acrylic Semi-Gloss Enamel <150 g/L. DFT 3.5 Mils min.
   a. Moore: 551 Regal Select Semi-Gloss.
   b. PPG: 87-6 Manor Hall Interior Semi-Gloss Acrylic Latex.
   c. S-W: B31W20 ProClassic Waterborne.

M. Stained woodwork with transparent finish is specified in Division 6 Sections by woodworker.

END OF SECTION 099100

SECTION 101400
SIGNAGE

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines.

B. ADA Standards - 2010 ADA Standards for Accessible Design.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Allowance: Interior panel signage shall be covered by allowance; refer to Section 012100 - Allowances.

B. Pre-Fabrication Meeting: The signage contractor shall meet with representatives of the Owner to develop a Signage Schedule, including signage style and layout, individual sign locations, including locations of code required signage and wayfinding signage, and final room naming and numbering. The Architect will provide the graphics contractor with reproducible floor plan drawings for use in determining sign locations.

1.03 SUBMITTALS

A. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

B. Signage Schedule (After Pre-Fabrication Meeting): Submit schedule with information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.

1. Submit for approval by Owner through Architect prior to fabrication.

C. Selection Samples: Where colors are not specified, submit color selection charts or chips for each type of signage.

D. Verification Samples: Submit samples, manufacturer's standard size, showing selected colors for each type of signage.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store tape adhesive at normal room temperature.

1.05 FIELD CONDITIONS

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.

B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
   1. Sign Type: Flat signs with engraved panel media as specified.
   2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
   3. Toilet room signage shall include pictograms and international symbol of accessibility.

2.02 PANEL SIGNAGE TYPES

A. General: Interior and exterior panel signage shall be provided via lump-sum allowance; refer to Division 1 Section "Allowances."

B. Manufacturers:
   1. Allen Industries Architectural Signage.
   2. APCO Graphics, Inc.
   3. ASI-Modulex, Inc.
   4. Best Sign Systems, Inc.
   5. Gemini Incorporated.
   6. Innerface Sign Systems, Inc.
   7. InPro Corporation.
   8. Matthews International Corporation, Bronze Division.
   9. Mohawk Sign Systems.
   10. Nelson-Harkins Industries.
   11. Seton Identification Products.
   12. The Supersine Company.
   13. Welch Sign.
   14. Worth Higgins and Associates.
   15. Substitutions: See Section 016000 - Product Requirements.

C. Photopolymer Panel Signage: Signage media without frame.
   1. Signage Material: 0.032-inch water wash photopolymer face layer over a 0.160-inch phenolic or 0.120-inch PETG base layer.
   2. Edges: Square.
   3. Corners: Square.
   4. Wall Mounting of One-Sided Signs: Tape adhesive.
      a. For signs mounted to glass, such as at door sidelights, provide a rear cover plate so the backside of sign will not be visible through the glass.
   5. Tactile Signage: Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.

D. Color and Font: Unless otherwise indicated, panel signage, font, and color shall be selected from manufacturer's full range.

E. Code-Required Signage: In addition to the room signage, provide panel signage required by accessibility regulations and requirements of authorities having jurisdiction, including, but not limited to, the following:
   1. Tactile exit signs, stairway identification signs, room maximum capacity signs, elevator signs, and accessible space signs.
   2. Refer to Division 26 and Electrical Drawings for illuminated exit signs.

2.03 DIMENSIONAL LETTERS

A. Manufacturers:
   1. A.R.K. Ramos.
   2. ASI-Modulex, Inc.
   3. Charleston Industries, Inc.
   4. Gemini Incorporated.
   5. Innerface Sign Systems, Inc.
   6. Matthews International Corporation, Bronze Division.
   7. Metal Arts; Division of L&H Manufacturing Co.
   8. Mills Manufacturing Company.
   9. Mohawk Sign Systems.
   10. Superior Signs.
   11. Worth Higgins and Associates.
   12. Substitutions: See Section 016000 - Product Requirements.

B. Metal Letters:
   1. Metal: Aluminum casting.
   2. Letter Thickness: Provide manufacturer's standard for height indicated, or as follows:
      a. 9 inches high or less: 3/4 inch thick.
      b. 10- to 14-inches high: 1 inch thick.
      c. 15- to 17-inches high: 1-1/4 inches thick.
      d. 18 inches high or more: 1-1/2 inches thick.
   3. Letter Height: As indicated on drawings.
   4. Text and Typeface: As indicated; where not indicated, as selected by Architect from manufacturer's full range of fonts.
      a. Character Case: Upper case only.
   5. Finish: Painted; color as selected by Architect from manufacturer's full range.
   6. Mounting: Fabricate dimensional lettering for the following mounting types:
      a. Bottom Rail Mount: Provide characters with flattened base, and fasten to an aluminum C-channel rail with stainless steel screws. Rail shall have black enamel finish. Provide vertical post supports extending to structural substrate and fasten securely and seal penetrations watertight.

2.04 ACCESSORIES

A. Concealed Screws: Stainless steel, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

1. Room Signs: Mount on latch side, with a clear space of 18 inches by 18 inches beyond the door swing arc, centered on the tactile characters. At double doors, mount to the right of right-hand leaf or on nearest adjacent wall. Mount at height that is compliant with ADA Standards.

D. Mounting, Dimensional Letters:

1. Projected Wall Mounted: Cast studs into the back of each letter for wall mounting at location indicated. Studs shall be sized to extend through cladding and fasten to structural substrate. Provide for a 1/2-inch gap between back of letter and face of cladding. Do not mount directly flush to wall surface.
2. Bottom Stud Mount: Provide characters with studs cast into bottom and with flattened base, and fasten directly to structural substrate below.
3. Bottom Rail Mount: Provide characters with flattened base, and fasten to an aluminum C-channel rail with stainless steel screws. Rail shall have black enamel finish. Provide vertical post supports extending to structural substrate and fasten securely and seal penetrations watertight.

E. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

END OF SECTION 101400

SECTION 102600
WALL AND DOOR PROTECTION

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.

B. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

C. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

E. ASTM F476 - Standard Test Methods for Security of Swinging Door Assemblies.

F. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2.

G. FDA Food Code - Chapter 6 - Physical Facilities.

H. ISO 846 - Plastics - Evaluation of the Action of Microorganisms.

I. ISO 2812-1 - Paints and Varnishes -- Determination of Resistance to Liquids -- Part 1: Immersion in Liquids Other than Water.

J. SCAQMD 1168 - Adhesive and Sealant Applications.

1.02 SUBMITTALS

A. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.

B. Shop Drawings: Include plans, elevation, sections, and attachment details.

C. Selection Samples: Provide manufacturer's color charts for each product and material requiring color selection.

D. Verification Samples: Submit physical samples, manufacturer's standard size, for each selected color.

E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.03 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. Protect work from UV light damage.

D. Do not deliver products to project site until areas for storage and installation are fully enclosed, and interior temperature and humidity are in compliance with manufacturer's recommendations for each type of item.

E. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

1.04 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 5-year manufacturer warranty for metal crash rails. Complete forms in Owner's name and register with manufacturer.
   1. Failures include, but are not limited to, the following:
      a. Structural failures or internal connection failures.
      b. Deterioration of materials beyond that expected of normal use, as intended by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Corner Guards:
   1. Construction Specialties, Inc.
   2. Inpro.
   3. Koroseal Interior Products.
   4. Nystrom, Inc.
   5. Substitutions: See Section 016000 - Product Requirements.

B. Impact Resistant Wall Covering (Decorative Panels):
   1. Construction Specialties, Inc.
   2. Inpro.
   3. Pawling Corp.
   4. Substitutions: See Section 016000 - Product Requirements.

C. Impact Resistant Wall Covering with Custom Digital Image:
   1. Construction Specialties, Inc; Acrovyn by Design High Impact Wallcovering.
   2. Inpro; Aspex Printed Wall Protection
   3. Koroseal Interior Products, LLC; Fusion Digitally Printed Protective Wallcovering.
   4. Substitutions: See Section 016000 - Product Requirements.

D. Impact Resistant Wall Covering (Sanitary Panels):
   1. Crane Composites, Inc.
   2. Marlite, Inc.
   3. Nudo Products, Inc.
   4. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE CRITERIA

A. Impact Strength: Unless otherwise noted, provide protection products and assemblies that have been successfully tested for compliance with applicable provisions of ASTM D256 and/or ASTM F476.

B. Adhesives and Sealants: Adhesives and sealants field-applied inside the weatherproofing system shall be tested and determined compliant in accordance with CAL (CDPH SM) AND shall meet the chemical content requirements of SCAQMD 1168.

2.03 PRODUCT TYPES

A. Corner Guards - Surface Mounted:
   1. Basis-of-Design Product: Construction Specialties; Acrovyn VA Series.

2. Material: Polyethylene terephthalate (PET or PETG); PVC-free.
3. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
4. Width of Wings: 1-1/2 inches.
5. Corner: Square.
6. Color: To be selected by Architect from manufacturer's full range.
7. Length: One piece, 6 feet (72 inches) in length.

B. Metal Corner Guards - Surface Mounted:
1. Basis-of-Design Product: Construction Specialties; CO Series.
2. Material: Type 304 stainless steel, No. 4 finish, 16 gauge, 0.0625 inch thick.
3. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
4. Width of Wings: 3 inches.
5. Corner: Radiused.
6. Length: One piece, 8 feet (96 inches) in length.

C. Impact Resistant Wall Covering (Decorative Panels):
1. Basis-of-Design: Construction Specialties; Acrovyn High Impact Wall Covering.
2. Material: Polyethylene terephthalate (PET or PETG); PVC and PBTs-free.
3. Thickness: 0.040 inch.
4. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
5. Color: To be selected by Architect from manufacturer's full range.
6. Accessories: Provide manufacturer's standard color-matched trim and moldings.
7. Adhesive: Type recommended by panel manufacturer; low-VOC compliant.

D. Impact Resistant Wall Covering with Custom Digital Image:
1. Basis-of-Design: Construction Specialties; Acrovyn High Impact Wall Covering.
2. Material: Polyethylene terephthalate (PET or PETG); PVC and PBTs-free.
3. Thickness: 0.040 inch.
4. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
5. Pattern: Custom digital graphic.
    a. Include $500 allowance for digital image copyright acquisition and formatting unless digital image is already property of the Owner or wallcovering manufacturer.
    b. Digital image licenser shall provide a digital file formatted in accordance with wall protection manufacturer's digital requirements.
    c. Coordinate image selection and orientation with Architect after bidding.
6. Texture: Suede.
7. Accessories: Provide manufacturer's standard color-matched trim and moldings.
    a. Inside Corner Trim: Standard angle
    b. Outside Corner Trim: Standard angle.
8. Adhesive: Type recommended by panel manufacturer; low-VOC compliant.

E. Impact Resistant Wall Covering (Sanitary Panels):

1. Available Products:
   a. Crane Composites, Inc; Glasbord.
   b. Marlite, Inc; Standard FRP.
   c. Nudo Products, Inc; FiberLite FRP - Wall Panels.
   d. Substitutions: See Section 016000 - Product Requirements.
2. Wall Panels:
   a. Panel Size: 4 by 10 feet, nominal.
   b. Panel Thickness: 0.09 inch, minimum.
   c. Surface Design: Pebble.
   d. Color: White.
   e. Attachment Method: Adhesive only, sealant joints, no trim.
3. Material: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
   a. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
   b. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   c. Impact Strength: Greater than 6 ft lb force per inch, when tested in accordance with ASTM D256.
   d. Surface Characteristics and Cleanability: Provide products that are smooth, durable, and easily cleanable, in compliance with FDA Food Code, Chapter 6 - Physical Facilities.
   e. Chemical Cleanability: Excellent chemical resistance to common cleaners and detergents when tested in accordance with ISO 2812-1.
   f. Biological Resistance: Rating of 0, when tested in accordance with ISO 846.
4. Accessories: Provide manufacturer's standard vinyl trim.
5. Adhesive: Type recommended by panel manufacturer; low-VOC compliant.
6. Sealant: Mildew-resistant silicone; refer to Division 7 Section "Joint Sealants"; color coordinated with panel color.

F. Adhesives and Primers: As recommended by manufacturer.

2.04 FABRICATION

A. Fabricate components with tight joints, corners and seams.

2.05 SOURCE QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Provide wall and door protection systems of each type from a single source and manufacturer.

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. Corner Guards:
   1. Provide corner guards at all outside corners of gypsum board partitions.
   2. Position corner guards with bottom of guard immediately above top of wall base.
   3. Adhesive Installation: Apply continuous beads of adhesive on each leg of corner guard. Use a roller to ensure maximum contact with adhesive.

C. Impact Resistant Wall Coverings:
   1. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
   2. Establish a fixed level line slightly above finished floor, but not exceeding 1 inch, to allow for floor slab variations.
   3. Full-Height Installation: Establish a plumb line located at edge of starting point of first sheet to ensure following sheets will be installed plumb.
   4. 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.
   5. Adhesive Installation: Apply adhesive using trowel to an area of wall surface that can be completed within cure time of the adhesive. Use a roller to ensure maximum contact with adhesive.
   6. Install trim pieces as required for a complete installation. Allow tolerance for thermal movement. Place trim on panel before fastening edges, as required by manufacturer's installation instructions.
   7. At joints indicated to be caulked, allow for a minimum 1/16 inch wide gap between edges of sheets. Gaps are required to be of consistent width throughout the project. Remove excess sealant after paneling is installed and prior to curing.
   8. 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. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

B. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

END OF SECTION 102600

SECTION 102800
TOILET AND BATH ACCESSORIES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design.

B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

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

E. ASTM C1036 - Standard Specification for Flat Glass.

F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

G. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror.

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

I. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

1.03 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

B. Setting Drawings: For cutouts required in other work; include templates, substrate preparation instructions, and directions for preparing cutouts and installing anchoring devices.

C. Maintenance Data: For each type of accessory, to include in maintenance manual per Section 017800 - Closeout Submittals. Include list of replacement parts and service recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet, Shower, and Bath Accessories:
   1. American Specialties, Inc.
   2. Bobrick Washroom Equipment.
   3. Bradley Corporation.

B. Under-Lavatory Pipe Supply Covers:
   1. Plumberex Specialty Products, Inc.
   2. Truebro; IPS Corporation.

C. Provide products of each category type by single manufacturer.

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.

B. Keys: Provide 6 master/universal keys, minimum, to Owner.

C. Stainless Steel Sheet: ASTM A666/A666M, Type 304.

D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

E. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

F. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.
   1. Provide mechanical attachment of all accessories. Use of adhesive or double-side tape is not acceptable.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 TOILET ACCESSORIES SCHEDULE, GENERAL

A. General: The following products make reference to the designations indicated on the Toilet Accessories Schedule, Toilet Assemblies, and toilet room plans on the drawings; herein designated as "TA-x".

2.05 COMMERCIAL TOILET AND BATH ACCESSORIES

A. Grab Bars (TA-A, B, & C): 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, concealed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
      c. Finish: Satin.
      d. Length and Configuration: As indicated on drawings.
      e. Products:
         1) American Specialties, Inc.; 3700 Series.
         2) Bobrick Washroom Equipment, Inc.; B-5806 Series.
         3) Bradley Corporation; 832 Series.

B. Toilet Paper Dispenser (TA-D): Roll-in-reserve type, designed to allow automatic activation of reserve roll when needed, or manual activation by pressing release bar, surface-mounted, stainless steel unit with pivot hinge, tumbler lock.
   1. Products:
      a. American Specialties, Inc.; Model 20030.
      b. Bobrick Washroom Equipment, Inc.; Model B-4288.
      c. Bradley Corporation; Model 5402.

C. Sanitary Napkin Disposal Unit (TA-E): Stainless steel, surface-mounted, self-closing door, with full-length stainless steel piano-type hinge, removable receptacle.
   1. Products:
      a. American Specialties, Inc; Model 20852.

b. Bobrick Washroom Equipment, Inc.; Model B-270 Contura.
c. Bradley Corporation; Model 4781-11.

D. Soap Dispenser (TA-F): Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and vertical stainless steel tank and working parts; push type soap valve, check valve, and window gauge refill indicator, tumbler lock.
1. Minimum Capacity: 40 ounces.
2. Products:
a. American Specialties, Inc.; Model 0347.
b. Bobrick Washroom Equipment, Inc.; Model B-2111.
c. Bradley Corporation; Model 6562.

E. Mirrors (TA-G): Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
2. Size: As indicated on Drawings.
3. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
4. Products:
a. American Specialties, Inc; 0600 A Series.
b. Bobrick Washroom Equipment, Inc.; Model B-290.
c. Bradley Corporation; Model 780.

F. Robe Hook (TA-T): Heavy-duty stainless steel, double-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish. Provide one centered on interior face of door of all single-user toilet rooms and one adjacent to each shower, unless otherwise indicated on Drawings; verify final mounting locations with Architect in field.
1. Products (Double-Prong):
a. American Specialties, Inc.; Model 7345.
b. Bobrick Washroom Equipment, Inc.; Model B-7672.
c. Bradley Corporation; Model 9124.

2.06 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Under-Lavatory Pipe and Supply Covers:
1. Insulate exposed drainage piping, including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
3. Construction: 1/8 inch flexible PVC.
a. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
b. Microbial and Fungal Resistance: Comply with ASTM G21.
4. Color: White.
5. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces.
6. Products:
a. Plumberex Specialty Products, Inc; Plumberex Trap Gear.
b. Truebro; IPS Corporation; Lav Guard 2.

2.07 UTILITY ROOM ACCESSORIES

A. Combination Utility Shelf/Mop and Broom Holder (TA-V): 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
   1. Drying rod: Stainless steel, 1/4 inch diameter.
   2. Hooks: Three, 0.06 inch stainless steel rag hooks at shelf front.
   3. Mop/broom holders: Four spring-loaded rubber cam holders at shelf front.
   4. Length: 36 inches.
   5. Products:
      a. American Specialties, Inc; Model 1315-4.
      b. Bobrick Washroom Equipment, Inc.; Model B-224 x 36.
      c. Bradley Corporation; Model 9984.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

3.02 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 required by accessibility regulations, unless otherwise indicated on Drawings.

3.03 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION 102800

SECTION 104400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. FM (AG) - FM Approval Guide.

B. NFPA 10 - Standard for Portable Fire Extinguishers.

C. UL (DIR) - Online Certifications Directory.

1.02 SUBMITTALS

A. Product Data: Provide extinguisher operational features, extinguisher ratings and classifications, color and finish, anchorage details, and trim and door panel styles.

B. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.

C. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.03 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

B. Coordinate rough opening sizes to ensure cabinet locations meet ADA mounting requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers and Cabinets:
   1. Activar Construction Products Group, Inc. - JL Industries.
   2. Amerex Corporation.
   3. Ansul, a Tyco Business.
   4. Babcock-Davis.
   5. Badger Fire Protection.
   6. Buckeye Fire Equipment Company.
   7. Fire-End & Croker Corporation.
   8. Kidde, a unit of United Technologies Corp.
   9. Modern Metal Products; Div of Technico.
   10. Larsen's Manufacturing Co.
   11. MOON American.
   12. Nystrom, Inc.
   13. Oval Brand Fire Products.
   14. Potter-Roemer.
   15. Pyro-Chem, a Tyco Business.
   16. Strike First Corporation of America.

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.

1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.

B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
   1. Class: 4-A: 60-B:C.
   2. Size: 10 pound.
   3. Finish: Baked polyester powder coat, manufacturer's standard color.
   4. Temperature Range: Minus 40 degrees F to 120 degrees F.

C. Wet Chemical Type Fire Extinguishers: Stainless steel tank, with pressure gauge.
   1. Class: K type.
   2. Size: 1.6 gallons.
   3. Finish: Manufacturer's standard polished stainless steel.
   4. Temperature Range: Minus 20 degrees F to 120 degrees F.

2.03 FIRE EXTINGUISHER CABINETS

A. Cabinet Construction, General:
   1. Formed cold-rolled steel sheet; minimum 0.036 inch thick base metal.
   2. Size to accommodate extinguisher(s) and accessories indicated.
   3. Provide cabinet enclosures with right angle inside corners and seams, and with formed perimeter trim and door stiles.

B. Cabinet Configuration: Semi-recessed type.
   1. Trim Type: One piece trim and door frame, returned to wall surface. Rolled edge trim; 2-1/2- to 3-inch depth as standard with manufacturer.
   2. Available Products: One of the following, or comparable product by manufacturer from list above:
      a. J.L. Industries/Activar; Ambassador 1017.
      b. Larsen's Manufacturing Co.; Model 2409-6R.
      c. Potter-Roemer; Model 1724.

C. Doors: Minimum 0.036 inch metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with continuous piano hinge.
   1. Door Glazing Style: Vertical duo, configuration as standard with manufacturer.
   2. Door Glazing: Tempered glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.

D. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.

E. Operating Hardware: Manufacturer's standard for cabinet type; continuous door hinge allowing 180 degree opening, with ADA-compliant door latch either surface mounted or flush inset into door panel, with cam or friction latch operation.

F. Fabrication: Weld, fill, and grind components smooth.

G. Finish of Cabinet Exterior Trim and Door: Baked enamel, color as selected.

H. Finish of Cabinet Interior: White colored enamel.

2.04 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated or baked-enamel finish.

B. Lettering: “FIRE EXTINGUISHER” decal, or vinyl self-adhering, pre-spaced lettering in accordance with authorities having jurisdiction (AHJ).
   1. Apply vertically to door of fire extinguisher cabinets, and apply to wall surface at bracket mounted extinguishers.

2.05 EMERGENCY KEY ACCESS BOX

A. Commercial Door Key Access Box: Provide fire department emergency key access box manufactured by The Knox Company; as required by local Fire Marshal. Provide Knox Box recessed mount 3200 Series, nominal 4 inches by 5 inches by 3-1/4 inches deep, with tamper switch and recessed mounting kit. Provide manufacturer's standard polyester powder coat finish in black color. No substitutions will be considered. Coordinate recessed installation with substrate construction, electrical connections as required for proper operation, and with requirements of local Fire Marshal. Contact Knox Company: www.knoxbox.com

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, no greater than 48 inches from finished floor to top of handle.

C. Install mounting brackets at 44 inches above finish floor.

D. Secure rigidly in place.

E. Place extinguishers and accessories in cabinets and on wall brackets as applicable.

F. Install cabinet and extinguisher signage.

G. Adjust cabinet doors after installation to ensure smooth operation.

3.03 PROTECTION AND CLEANING

A. Protect fire extinguishers, fire extinguisher cabinets, and accessories from damage until Substantial Completion.

B. Provide touchup to damaged finishes; replace items that cannot be satisfactorily repaired or refinished.

END OF SECTION 104400

SECTION 122400
WINDOW SHADES

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

B. NFPA 70 - National Electrical Code.

C. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

D. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

E. WCMA A100.1 - Standard for Safety of Window Covering Products.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work related to products of this section; require attendance of affected installers.

B. 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.

1.03 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.

B. 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.

C. Source Quality Control Submittals: Provide test reports indicating compliance with specified fabric properties.

D. Selection Samples: Include fabric samples in full range of available colors and patterns.

E. Verification Samples: Minimum size 6 inches square, representing actual materials, color and pattern.

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.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Authorized installation representative of fabricator/manufacturer.

1.05 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.

1.06 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following minimum terms:
   1. Manual Operating Mechanism / Clutch: 10 years, minimum (excludes bead chain).
   2. Fabric: 10 years, minimum.
   3. Balance of Shade Hardware and Non-Operating Materials and Components: 25 years, minimum.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Interior Manually Operated Roller Shades:
   1. Draper, Inc; Clutch Operated FlexShade.
   2. Hunter Douglas Architectural; RB500 Manual Roller Shades.
   3. Lutron Electronics Co., Inc; Contract Roller Manual Roller Shades.
   4. MechoShade Systems LLC; Mecho/5 System.
   5. SWFcontract, a division of Springs Window Fashions, LLC.; Pro Series Manual Solar Shade System.
   6. WT Shade, an InPro Company; HeliaRise.
   7. Substitutions: See Section 016000 - Product Requirements.

B. Source Limitations: Provide products produced by a single manufacturer and obtained from a single supplier.

2.02 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.
   3. Motorized Shades: Motor system housed inside roller tube, controlling shade movement via motor controls indicated; listed or recognized to UL 325.
      a. Comply with NFPA 70.
      b. Electrical Components: Listed, classified, and labeled as suitable for the purpose intended. Where applicable, system components to be FCC compliant.
      c. Motors: Size and configuration as recommended by manufacturer for the type, size, and arrangement of shades to be operated; integrated into shade operating components and concealed from view; fully compatible with controls to be installed.

B. Roller Shades:
   1. Description - Interior Roller Shades: Single roller, manually operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories.
      a. Drop Position: Regular roll.
      b. Roll Direction: Roll down, closed position is at window sill.

c. Mounting: Jamb mounted within rough opening, unless otherwise indicated.
   1) Where length exceeds maximum of a single shade section and jamb mounting is not feasible, provide for mounting to overhead/lintel construction.
   2) Secure to the structural building construction at jambs or overhead as indicated (masonry, cold-formed steel framing). Shades shall not be mounted directly to window frames or mullions.
d. Size: As indicated on drawings for rough opening sizes; field verify rough openings prior to fabrication.

2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
3. Roller Tubes: As required for type of shade operation.
4. Hembars: Designed to maintain bottom of shade straight and flat.
5. 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 pounds minimum breaking strength. Provide upper and lower limit stops.
   c. Safety Device: At all chain/loop operators, provide a WCMA A100.1 compliant chain tensioning hold-down device/retainer.
6. Accessories:
   a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; clear anodized finish.
   b. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets.
   c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

2.03 SHADE FABRIC

A. Fabric: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
   1. Products (3%): Vinyl coated fiberglass.
      a. Lutron Electronics Co., Inc; Basketweave 27 - 3%.
      b. Mermet Corporation; E-Screen - 3%.
      c. Phifer, Inc; SheerWeave 2410 - 3%.
      d. Substitutions: See Section 016000 - Product Requirements.
   2. Products (Blackout): 100% polyester with acyrlic flocked backing (PVC free)
      a. Lutron Electronics Co., Inc; Value Premiere Blackout.
      b. Mermet Corporation; Sparta Twilight.
      c. Phifer, Inc; Style 7000 Blackout.
      d. Substitutions: See Section 016000 - Product Requirements.
   3. Performance Requirements:
      a. Flammability: Pass NFPA 701 large and small tests.
      b. Fungal Resistance: No growth when tested according to ASTM G21.
   4. Color: To be selected by Architect from manufacturer’s full range.
   5. Fabrication:
      a. Fabric Orientation: Railroaded, fabric is turned 90 degrees off the roll.

b. If height of opening requires multiple panels of railroaded fabric, use manufacturer's standard sewn seams.

2.04 ROLLER SHADE FABRICATION

A. Field measure finished openings prior to ordering or fabrication.

B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
   1. Vertical Dimensions: Fill openings from head to sill with 1/4 inch maximum space between bottom bar and window stool.
   2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb, with maximum 1/4 inch gap at each edge of jamb.

C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine finished openings for deficiencies that may preclude satisfactory installation.

B. 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. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

C. Jamb mount shades at each end within the rough opening unless otherwise indicated. At large openings where multiple shades are required and jamb mount is not feasible, overhead mount shade to overhead/lintel construction. Do not mount to window framing.

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 PROTECTION

A. Protect installed products from subsequent construction operations.

B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION 122400

SECTION 313116
TERMITE CONTROL

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. Title 7, United States Code, 136 through 136y - Federal Insecticide, Fungicide and Rodenticide Act.

1.02 COORDINATION

A. Integrated Pest Management: Coordinate and comply with Owner's in-place integrated pest management plan.

B. Coordinate with earth moving and excavation, and with foundation and concrete work, to provide treatments at appropriate stages of the work in accordance with manufacturer's recommended best practices and application instructions.

1.03 SUBMITTALS

A. Product Data: Indicate toxicants to be used, composition by percentage, dilution schedule, intended application rate.

B. Test Reports: Indicate regulatory agency approval reports when required.

C. Certificate of compliance from authority having jurisdiction indicating registration and approval of toxicants.

D. Applicator qualification statement.

E. Warranty: Submit warranty and ensure that forms have been completed in Owner's name.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing this type of work and:

1. Approved by manufacturer of treatment materials.
2. Licensed in the State in which the Project is located.

1.05 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year installer's warranty against damage to building caused by termites.

1. Include coverage for repairs to building and to contents damaged due to building damage. Repair damage and, if required, re-treat.

PART 2 PRODUCTS

2.01 CHEMICAL SOIL TREATMENT

A. Toxicant Chemical: EPA Title 7, United States Code, 136 through 136y approved; synthetically color dyed to permit visual identification of treated soil.

1. Toxicant chemical shall be a non-repellant type based on fipronil as active ingredient, acting on termites through ingestion or contact. Alternate proposed toxicant shall be submitted as a substitution for review under Owner's Integrated Pest Management plan.
    a. Active ingredient shall not harm adjacent plant life and landscaping; and shall be demonstrated as safe/harmless for humans and domestic animals.

2. Limitations: Organophosphates (off market due to EPA ban) and pyrethroid treatments, including chorpyrifos and cypermethrine are not acceptable.

B. Diluent: Recommended by toxicant manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that soil surfaces are unfrozen, sufficiently dry to absorb toxicant, and ready to receive treatment.

B. Verify final grading is complete.

3.02 APPLICATION - CHEMICAL TREATMENT

A. Comply with requirements of U.S. EPA and applicable state and local codes.

B. Spray apply toxicant in accordance with manufacturer's instructions.

C. Apply toxicant at following locations:

1. Under slabs-on-grade.
2. Along both exterior and interior sides of foundations, including perimeter foundations, foundations and footings for interior partition walls, piers, and columns.
3. Around penetrations through slabs such as plumbing pipes and electrical conduits.

D. Under slabs, apply toxicant immediately prior to installation of vapor barrier.

E. At foundation walls, apply toxicant immediately prior to finish grading work outside foundations.

F. Apply extra treatment to structure penetration surfaces such as pipe or ducts, and soil penetrations such as grounding rods or posts.

G. Re-treat disturbed treated soil with same toxicant as original treatment.

H. If inspection or testing identifies the presence of termites, re-treat soil and re-test.

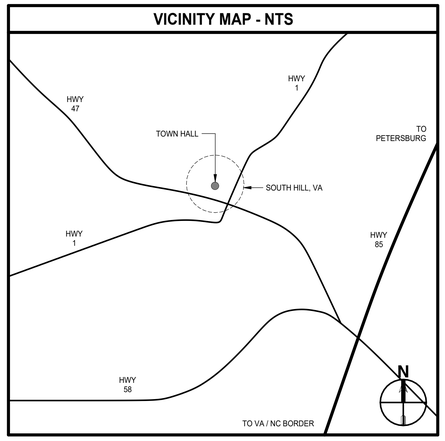
END OF SECTION 313116

100% CONSTRUCTION DOCUMENTS

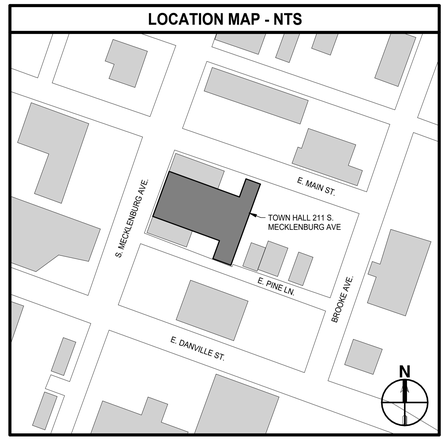
TOWN HALL RENOVATIONS

TOWN OF SOUTH HILL
SOUTH HILL, VA

VICINITY MAP - NTS



LOCATION MAP - NTS



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212 E. Ferrell Street — South Hill, VA 23970

Kilian Engineering Inc. — MEP / FP
115 Young Street, Suite C — Henderson, NC 27536

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THE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL.
IN CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.

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COMMONWEALTH OF VIRGINIA
CHRISTOPHER J. ROMAN
Lic. No. 0401015628
ARCHITECT
09-29-2025

TOWN HALL RENOVATIONS
211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

PROJECT NO: 651455
DATE: September 29, 2025

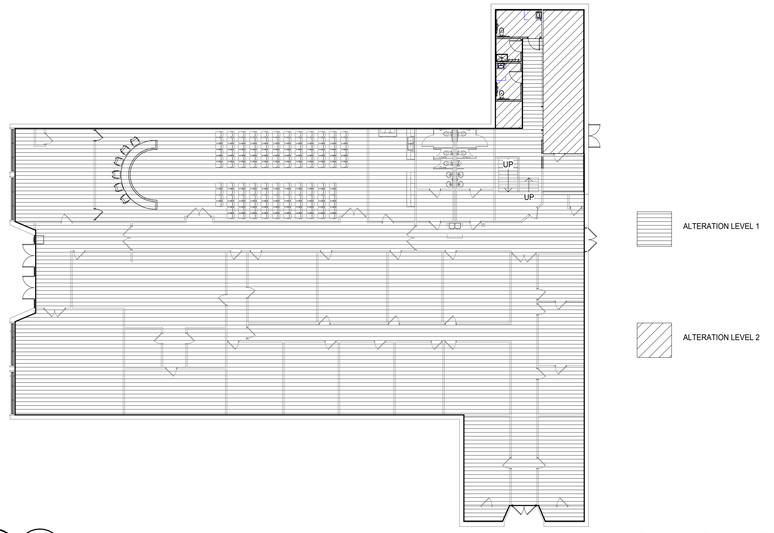
REVISIONS

DATE	DESCRIPTION

COVER

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3 A2.1 LS1.1

MAIN FLOOR ALTERATION LEVEL PLAN

1/16" = 1'-0"

0' 4' 8' 16' 32'

1/16" = 1'-0"

OCCUPANCY SCHEDULE (Existing)

ROOM #	SPACE NAME	USE CLASSIFICATION	USED TO DETERMINE OCCUPANCY FACTOR ONLY	FLOOR AREA PER OCCUPANT	AREA (SF) GROSS	OCCUPANCY LOAD TABULAR	OCCUPANCY COUNT ACTUAL
M00	CORRIDOR	B	CIRCULATION	0 SF	299		0
M01	TOILET	B	TOILETS	0 SF	77		0
M02	TOILET	B	TOILETS	0 SF	77		0
M03	JAN	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	31	1	1
M04	STORAGE	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	281	1	1
M05	STORAGE	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	116	1	1
M06	ELEC	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	115	1	1
M07	TOILET	B	TOILETS	0 SF	74		0
							4

OCCUPANCY SCHEDULE

ROOM #	SPACE NAME	USE CLASSIFICATION	USED TO DETERMINE OCCUPANCY FACTOR ONLY	FLOOR AREA PER OCCUPANT	AREA (SF) GROSS	OCCUPANCY LOAD TABULAR	OCCUPANCY COUNT ACTUAL
M00	HALLWAY	B	CIRCULATION	0 SF	440		0
M01	TOILET	B	TOILETS	0 SF	61		0
M02	JAN	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	39	1	1
M03	TOILET	B	TOILETS	0 SF	83		0
M04	BREAK AREA	B	BUSINESS AREAS	150 SF	395	3	5
M05	ELEC / DATA / STORAGE	B	ACCESSORY STORAGE & MECHANICAL EQUIPMENT ROOM	300 SF	101	1	1
							7

EXISTING / NEW OCCUPANT LOAD *(IN WORK AREA - ALTERATION LEVEL 1)*	OCCUPANT LOAD FOR ALTERATION LEVEL 1 WORK AREA - EXISTING TO REMAIN
EXISTING OCCUPANT LOAD *(IN WORK AREA - ALTERATION LEVEL 2)*	**4 PERSONS** (CALCULATED FROM WORK AREA ON EXISTING FLOOR PLANS - NOT SHOWN)
NEW OCCUPANT LOAD *(IN WORK AREA - ALTERATION LEVEL 2)*	**7 PERSONS** (CALCULATED FROM WORK AREA ON NEW FLOOR PLANS - THIS SHEET)

APPLICABLE CODES AND REGULATIONS

- 2021 Virginia Existing Building Code (VEBC)
- 2021 Virginia Construction Code (VCC)

CONSTRUCTION TYPE AND OCCUPANCY - (CHAPTER 6 & CHAPTER 3 VCC)

- The existing building is believed to be Type 3B construction:
  - The main floor level is comprised of a structural steel frame, concrete floor slab, and steel bar joists with metal decking at the roof. Interior partitions are CFMF with GWB finish.
  - The upper level is comprised of a wood framed floor and roof structure. Interior partitions are wood stud with GWB finish.
- The exterior / party walls appear to be comprised of CMU and/or brick.
- The existing building appears to be fully sprinklered at the main, upper, and basement levels.
- The existing occupancy classification is B - Business (and will not change).

ALTERATION LEVEL 1 (see alteration level plan on sheet LS1.1 for extents) For this project Level 1 alterations will include:

- Replacing finishes like-for-like, including ceiling, wall, wall-base, and floor finishes.

ALTERATION LEVEL 2 (see alteration level plan on sheet LS1.1 for extents) For this project, Level 2 alterations will include:

- The reconfiguration of space at the upper level, including demolishing existing interior partitions and erecting new ones.
- The elimination of doors, infill of existing cased openings, infill of existing doors, and expansion/addition of existing cased openings.
- The reconfiguration or extension of various systems - see Plumbing, Mechanical, and Electrical drawings.

OTHER CHANGES

- Chapter 7 (VEBC) -

Change of occupancy - a change in level of activity will occur, but with no change in occupancy classification. The occupant load at the upper level will increase (by 3 occupants as shown in the tables above) due to changing a storage room to a secondary break area. This increase does not impact egress requirements.

705.4 - Means of egress meets the egress capacity and occupant load per Chapter 10 of the VCC for new construction.

710.1 - Exception - if change in occupancy is less than 20%, additional plumbing fixtures are not required.

NOT APPLICABLE

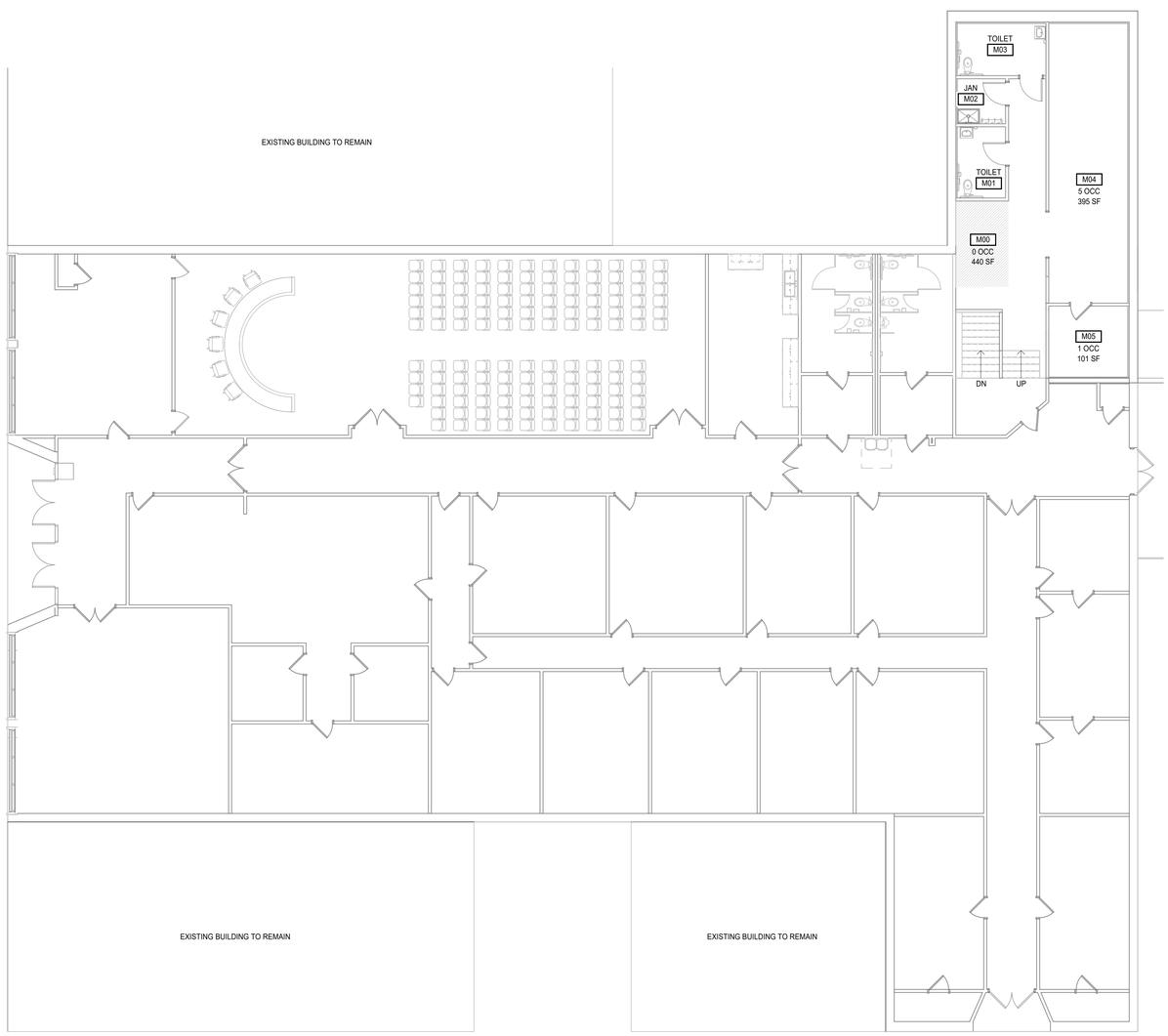
- The travel distances, corridor widths, and means of egress from all points in the building will remain unchanged.
- There are no additions to the building height or area.

MEANS OF EGRESS & ACCESSABILITY

- Existing corridor widths shall be maintained.
- Existing accessible features (shared toilets, drinking fountain, etc.) shall be maintained.
- Existing sprinkler system / piping layout shall be maintained.
- Existing interior stairs shall be maintained.

SAFEGUARDS DURING CONSTRUCTION

- Maintain required exits, fire projection devices and sanitary safeguards at all times; where such required elements or devices are being altered or repaired, make adequate substitute provisions. Coordinate maintenance of egress path rating with building official.



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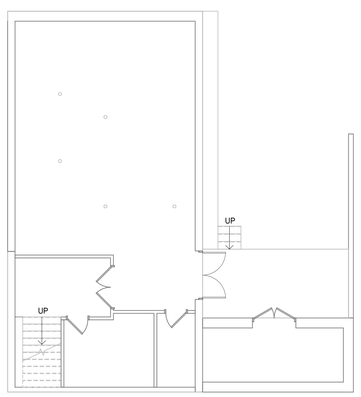
1 A2.1 LS1.1

MAIN FLOOR LIFE SAFETY PLAN

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"



N

2 LS1.1

BASEMENT LIFE SAFETY PLAN

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

LIFE SAFETY SYMBOL LEGEND

APPLIES TO LS SERIES OF DRAWINGS ONLY

DESIGNATOR MATRIX

	WALL	BARRIER	PARTITION	RATED BEARING OR NON-BEARING WALL
4 HR FIRE				
3 HR FIRE				
2 HR FIRE				
1 HR FIRE				
½ HR FIRE				
SMOKE				
SMOKE-TIGHT				
INCIDENTAL				

NOTES:

1. WALL DESIGNATIONS ON THE LS SERIES OF DRAWINGS ARE FOR GRAPHICAL PURPOSES ONLY AND MAY NOT REPRESENT THE ACTUAL WALL/PARTITION CONSTRUCTION.

2. REFER TO THE CONTRACT DOCUMENTS, INCLUDING THE LIFE SAFETY SYMBOLS LEGEND AND A0, A1 AND, A2 SERIES OF DRAWINGS, FOR ACTUAL WALL/PARTITION TYPES AND CONSTRUCTION REQUIREMENTS.

3. RATING OF BEARING OR NON-BEARING WALLS ARE PER TABLE 601 AND SECTION 602.1 AND DO NOT REQUIRE PROTECTED OPENINGS.

SYMBOLS

- 1205 — ROOM NUMBER
- 798 1280 — DIRECTION OF EGRESS, EGRESS LOAD CAPACITY, NUMBER OF OCCUPANTS
- DIRECTION OF EGRESS, NUMBER OF OCCUPANTS, EGRESS LOAD CAPACITY — 798 1280
- 174'-9" TD — EXIT ACCESS TRAVEL DISTANCE
- 74'-9" CPOT — COMMON PATH OF TRAVEL
- FIRE EXTINGUISHER CABINET
- FIRE EXTINGUISHER BRACKET
- EXISTING 1-HR RATED PARTITION

FIRE RATED ASSEMBLIES

REPRESENTED BY 〈 Xn 〉

THE ASSEMBLIES REFERENCED ARE BASIS OF DESIGN; EQUIVALENT COMPATIBLE TESTED ASSEMBLIES WILL BE ACCEPTABLE IF APPROVED BY THE LAHJ

MARK	FIRE RATING	APPLIES TO	REFERENCE	REMARKS
Xn	N/A	N/A	N/A	NOT USED

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REVISIONS

DATE	DESCRIPTION

LIFE SAFETY INFORMATION

LS1.1

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ARCHITECTURAL ABBREVIATIONS

A-PT	ACCENT PAINT
ABS	AIR BARRIER SYSTEM
ABV	ABOVE
ACP	ACOUSTICAL CEILING PANEL
ACT	ACOUSTICAL CEILING TILE
ACW	ALUMINUM CLAD WINDOW
ADJ	ADJUSTABLE
AED	AUTOMATED EXTERNAL DEFIBRILLATOR
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AP	ACCESS PANEL
APC	ARCHITECTURAL PRECAST CONCRETE
ARC	ABUSE RESISTANT COATING
AS	ALUMINUM STOREFRONT
AUTO	AUTOMATIC
AVG	AVERAGE
AW	ALUMINUM WINDOW
AWC	ACOUSTICAL WALL COVERING
AWP	ACOUSTICAL WALL PANEL
BD	BOARD
BF	BARRIER FREE (ADA or A117.1)
BLDG	BUILDING
BLKG	BLOCKING
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
BUR	BUILT-UP ROOF
C	CARPET
C-TILE	CARPET TILE
CAB	CABINET
CB	CHALKBOARD
CCTV	CLOSED CIRCUIT TELEVISION
CEM	CEMENT
CFSF-NS	COLD FORMED STEEL FRAMING, NON-STRUCTURAL
CFSF-S	COLD FORMED STEEL FRAMING, STRUCTURAL
CG	CORNER GUARD
CI	CONTINUOUS INSULATION
CIPC	CAST IN PLACE CONCRETE
CJ	CONTROL JOINT
CL	CLOSET
CLG	CEILING
CLR	CLEAR
CM	CENTIMETER
CMBD	CEMENT BOARD
CMU	CONCRETE MASONRY UNIT
CMU-A	CONCRETE MASONRY UNIT - ACOUSTICAL
CMU-GF	CONCRETE MASONRY UNIT - GROUND FACE
CMU-GLZ	CONCRETE MASONRY UNIT - GLAZED
CMU-SPLF	CONCRETE MASONRY UNIT - SPLIT FACE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONC-LH	CONCRETE WITH LIQUID HARDENER/SEALER
CONC-PMT	CONCRETE WITH PIGMENT
CONC-POL	CONCRETE - POLISHED
CONC-SLR	CONCRETE WITH CURE & SEAL
CONC-ST	CONCRETE WITH STAIN
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORR	CORRIDOR
CSMU	CAST STONE MASONRY UNIT
CT	CERAMIC TILE
CTSK	COUNTERSINK, COUNTERSUNK
CU FT	CUBIC FEET / FOOT
CUST	CUSTODIAN / CUSTODIAL
CW	ALUMINUM CURTAIN WALL
CWFD	CEMENTITIOUS WOOD FIBER DECK
D	DEPTH/DEEP
DBL	DOUBLE
DEMO	DEMOLITION
DETE	DETENTION
DF	DRINKING FOUNTAIN
DG	DOOR GRILLE
DHM	DETENTION HOLLOW METAL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DL	DOOR LOUVER
DN	DOWN
DP	DAMPPROOFING
DR	DISPLAY RAIL
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
DWR	DRAWER
EA	EACH
EF	EXHAUST FAN
EFS	EXTERIOR FINISH SYSTEM
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELAS	ELASTOMERIC
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
EPS	EXPANDED POLYSTYRENE
EPX	EPOXY
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EVCT	ENHANCED VINYL COMPOSITION TILE
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXH	EXHAUST
EXP	EXPANSION
EXPC	EXPOSED CONSTRUCTION
EXT	EXTERIOR
FAAF	FLUID APPLIED ATHLETIC FLOORING
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEB	FIRE EXTINGUISHER BRACKET
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FGL	FIBERGLASS
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHVC	FIRE HOSE VALVE CABINET
FIN	FINISHED
FLR	FLOOR
FLRG	FLOORING
FO	FACE OF
FRM	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FT	FOOT, FEET
FTG	FOOTING
FURN	FURNITURE
FVC	FIRE VALVE CABINET
FWC	FABRIC WALL COVERING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GYPSUM BOARD
GB-AR	GYPSUM BOARD - ABUSE RESISTANT
GB-IR	GYPSUM BOARD - IMPACT RESISTANT
GB-S	GYPSUM BOARD - SECURITY
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GL	GLASS, GLAZING
GL-BLK	GLASS BLOCK
GPM	GALLONS PER MINUTE
GRT	GROUT
GSFT	GLAZED STRUCTURAL FACING TILE
GT	GLASS TILE
GWT	GLAZED WALL TILE
GYP	GYPSUM
H	HIGH
HB	HOSE BIBB
HBD	HARDBOARD
HDC	HOLD DOWN CLIPS
HDNR	HARDENER
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HPC	HIGH PERFORMANCE COATINGS
HPFP	HIGH PERFORMANCE FLOOR PAINT
HT	HEIGHT
HVAC	HEATING, VENTILATING, AIR CONDITIONING
ID	INSIDE DIAMETER
IN	INCH, INCHES
INCL	INCLUDE, INCLUDING
INFO	INFORMATION
INST	INSTALLATION
INSUL	INSULATION
INT	INTERIOR
IRWC	IMPACT RESISTANT WALL COVERING
IWB	INTERACTIVE WHITE BOARD
JAN	JANITOR
JCT	JUNCTION
JT	JOINT
L	LENGTH/LONG
LAB	LABORATORY
LAHJ	LOCAL AUTHORITY HAVING JURISDICTION
LAM	LAMINATE
LAV	LAVATORY
LH	LEFT HAND
LIN	LINOLEUM
LKR	LOCKER
LMC	LINEAR METAL CEILING
LPS	LAMINATE PANEL SYSTEM
LT	LIGHT
LVR	LOUVER
M	METER
MACH	MACHINE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MARKERBOARD
MCM	METAL COMPOSITE MATERIAL
MCP	METAL CEILING PANEL
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MFR	MANUFACTURER
MIF	MULTICOLOR INTERIOR FINISHING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLDG	MOLDING
MO	MASONRY OPENING
MPS	MANUAL PROJECTION SCREEN
MR	MAP RAIL
MT	MOUNT
MTD	MOUNTED
MTL	METAL
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OPNG	OPENING
OPP HD	OPPOSITE HAND
OVHD	OVERHEAD
P-TILE	PORCELAIN TILE
PC	PRECAST
PERF	PERFORATED, PERFORATION(S)
PERIM	PERIMETER
PIP	POURED IN PLACE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLWD	PLASTIC LAMINATE WOOD
PLYWD	PLYWOOD
PNL	PANEL, PANELING
POLY	POLYETHYLENE
PPS	POWER PROJECTION SCREEN
PPT	PRESSURE- OR PRESERVATIVE-TREATED
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PREP	PREPARE / PREPARATION
PS	PROJECTION SCREEN
PSB	PENCIL SHARPENER BLOCK
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PTN	PARTITION
PTS	PNEUMATIC TUBE SYSTEM
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PVWC	PERFORATED VINYL WALL COVERING
QSM	QUARTZ SURFACING MATERIAL
QT	QUARRY TILE
QTY	QUANTITY
R	RISER, RADIUS
R/W	RIGHT OF WAY
RAD	RADIUS
RAF	RESILIENT ATHLETIC FLOORING
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REFG	REFRIGERATOR
REINF	REINFORCING, REINFORCE(D)
REM	RECESSED ENTRY MAT
REQ'D	REQUIRED
RES	RESINOUS FLOORING
RFT	RUBBER FLOOR TILE
RH	RIGHT HAND
RL	RAIN LEADER
RM	ROOM
RO	ROUGH OPENING
RSF	RUBBER SHEET FLOORING
RSR	RESILIENT STAIR RISER
RST	RESILIENT STAIR TREAD
RT	RIGHT
RTU	ROOFTOP UNIT
SAB	SOUND ATTENUATION BLANKET
SC-PLK	SECURITY CEILING PLANK
SC-PNL	SECURITY CEILING PANEL
SCH	SCHEDULE
SF	SQUARE FEET / FOOT
SFRM	SPRAYED FIRE RESISTANT MATERIAL
SHM	SECURITY HOLLOW METAL
SHTG	SHEATHING
SIM	SIMILAR
SPEC	SPECIFICATION
SPF	SPRAYED POLYURETHANE FOAM
SPR	SPRINKLER
SQ	SQUARE
SQ FT	SQUARE FEET / FOOT
SRD	SECONDARY ROOF DRAIN
SS	STAINLESS STEEL
SSM	SOLID SURFACE MATERIAL
ST	STREET
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STN	STONE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SWM	SECURITY WOVEN MESH / WOVEN ROD
SYM	SYMMETRICAL
T	TREAD
T&G	TONGUE & GROOVE
T.O.	TOP OF
TB	TACKBOARD
TCF	TEXTILE COMPOSITE FLOORING
TEL	TELEPHONE
TERR-C	TERRAZZO CEMENTITIOUS
TERR-E	TERRAZZO EPOXY
TERR-R	TERRAZZO RUBBERIZED
THHD	THRESHOLD
THK	THICKNESS, THICK
TOS	TOP OF STEEL
TOW	TOP OF WALL
TS	TACK STRIP
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCUT
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED (INDICATED) OTHERWISE
VAT	VINYL ASBESTOS TILE
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VDB	VISUAL DISPLAY BOARD
VERT	VERTICAL
VEST	VESTIBULE
VFCT	VINYL FREE COMPOSITION TILE
VFWC	VINYL FREE WALLCOVERING
VIF	VERIFY IN FIELD
VR	VAPOR RETARDER
VT	VINYL TILE
VTR	VENT THROUGH ROOF
VW	VINYL WINDOW
VWC	VINYL WALL COVERING
W	WIDE, WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCP	WOOD CEILING PANEL
WD	WOOD
WDW	WINDOW
WP	WATERPROOFING
WPT	WORKING POINT
WSCT	WAINSCOT
WSF	WOOD SPORTS FLOORING
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XPS	EXTRUDED POLYSTYRENE

KEYNOTES

- n — KEYNOTE (1 TO 2 DIGITS)
- nnn — KEYNOTE (3 DIGITS ONLY)
- n n/n" — SIZE: THICKNESS: OR OTHER DESCRIPTIVE INFORMATION

1. KEYNOTES ARE GENERALLY ASSOCIATED WITH A SERIES OF DRAWINGS (e.g., A3.2.n, A5.1.n); THEREFORE KEYNOTE NUMBERS FROM SERIES TO SERIES WILL VARY (i.e., KEYNOTE NO. 1 IN THE A3.2.n SERIES WILL BE DIFFERENT FROM KEYNOTE NO. 1 IN THE A5.1.n SERIES).

ARCHITECTURAL GRAPHIC SYMBOL LEGEND

REFER TO A3.0.1 FOR FINISH SCHEDULE — A101 / 100 SF — SUPERVISOR'S OFFICE — SPACE NAME; SPACE NUMBER; SQUARE FOOTAGE, IF INDICATED; BUILDING "PART" NUMBER IN MULTI-PART BUILDING

REFER TO A3.1.1 FOR SCHEDULE — A101C / 60 — DOOR; FIRE RATING IN MINUTES (IF INDICATED); DOOR SUFFIX LETTER WHEN MORE THAN ONE DOOR PER SPACE; SPACE NUMBER

REFER TO A3.1.n FOR TYPES — STL 11 — STEEL FRAME NUMBER

REFER TO A3.1.n FOR TYPES — AW 11 — ALUMINUM WINDOW NUMBER

REFER TO A3.1.n FOR TYPES — AS 11 — ALUMINUM STOREFRONT NUMBER

REFER TO A3.1.n FOR TYPES — VW 11 — VINYL WINDOW NUMBER

REFER TO A3.1.n FOR TYPES — CW 11 — CURTAIN WALL NUMBER

REFER TO A3.1.n FOR TYPES — VR 11 — LOUVER NUMBER

REFER TO A3.1.n FOR TYPES — GBK 11 — GLASS BLOCK NUMBER

REFER TO A0.2 FOR LEGEND — JOINT

REFER TO A0.2 FOR LEGEND — Xn<n — WALL PARTITION TYPE; FIRE RESISTANCE RATING IN HOURS

REFER TO A0.2 FOR LEGEND — Xn-XX — WALL PARTITION TYPE; SB=SMOKE BARRIER SP=SMOKE PARTITION IU=INCIDENTAL USE

REFER TO A8.1.1 FOR ELEVATIONS — 9 / A8.3 / A8.1 / 10 — INTERIOR ARCHITECTURAL WOODWORK (CASEWORK) ELEVATION

REFER TO A10.1 FOR LEGEND — RFAn — ROOF ASSEMBLY

REFER TO LS1.1 FOR LEGEND — Xn — FIRE-RATED ASSEMBLY

REFER TO A5.1.1 FOR LEGEND — WAn — WALL ASSEMBLY

REFER TO A7.1.1 FOR LEGEND — TAn — TOILET ASSEMBLY

REFER TO A3.1.n FOR LEGEND — n — GLAZING/GLASS TYPES

1T — EQUIPMENT TYPE

N — PLAN NORTH; TRUE NORTH ARROW

MATCH LINE

WPT — WORKING POINT

DATUM POINT

℄ — CENTERLINE

℄ — PLATE

FEC — SURFACE MOUNT FEC: BOTTOM OF CABINET AT 2'-2" AFF

FEC — SEMI-RECESSED FEC: T.O. MASONRY OR ROUGH OPENING AT 4'-8" AFF

FEC — FULLY-RECESSED FEC: T.O. MASONRY OR ROUGH OPENING AT 4'-8" AFF

FEB — BRACKET: MOUNT BRACKET AT 3'-8" AFF

1 / A2.1 — WALL OR MSC SECTION WHERE CUT; WALL SECTION NUMBER; DRAWING NUMBER WHERE WALL SECTION IS INDICATED

1 / A2.1 — DETAIL OR ENLARGED PLAN WHERE CUT; DETAIL OR ENLARGED PLAN NUMBER; DRAWING NUMBER WHERE DETAIL OR ENLARGED PLAN IS INDICATED

1 / A2.1 — 1 / A2.1 — BUILDING SECTION WHERE CUT; SECTION NUMBER; DRAWING NUMBER WHERE SECTION IS INDICATED

1 / 2 A7.1 4 / 3 — 1 / A7.1 — INTERIOR OR EXTERIOR ELEVATION WHERE CUT; ELEVATION NUMBER; DRAWING NUMBER WHERE ELEVATION IS INDICATED; MULTIPLE ELEVATIONS

PLAN TITLE
1/8"=1'-0"

A / A2.0.1 A2.0.2 A2.0.3 / A4.1 — 1/4"=1'-0" — ELEVATION OR BUILDING SECTION TITLE; ELEVATION OR BUILDING SECTION LETTER; DRAWING NUMBER WHERE ELEVATION OR BUILDING SECTION IS INDICATED; DRAWING NUMBER WHERE ELEVATION OR BUILDING SECTION IS CUT; ADDITIONAL DRAWING NUMBERS WHERE ELEVATION OR BUILDING SECTION IS CUT

1 / A2.1 A2.3 A2.6 / A7.1 — 1/4"=1'-0" — ENLARGED PLAN OR WALL SECTION TITLE; ENLARGED PLAN OR WALL SECTION NUMBER; DRAWING NUMBER WHERE ENLARGED PLAN OR WALL SECTION IS INDICATED; DRAWING NUMBER WHERE ENLARGED PLAN OR WALL SECTION IS CUT; ADDITIONAL DRAWING NUMBERS WHERE ENLARGED PLAN OR WALL SECTION IS CUT

3 / A5.1 A5.2 A5.3 A5.7 — 1/2"=1'-0" — DETAIL TITLE; DETAIL NUMBER OR LETTER; DRAWING NUMBER WHERE DETAIL IS INDICATED; DRAWING NUMBER WHERE DETAIL IS CUT; ADDITIONAL DRAWING NUMBERS WHERE DETAIL IS CUT

1 — 1/4"=1'-0" — CASEWORK TITLE; CASEWORK ELEVATION NUMBER

1 / A — STRUCTURAL GRID LINE WITH DESIGNATIONS

EX1 / EXA — EXISTING STRUCTURAL GRID LINE WITH DESIGNATIONS

DETENTION SYMBOL LEGEND

XX — DETENTION WINDOW; FRAME NUMBER INDICATES ROOM SIDE WHERE GLAZING STOP IS LOCATED; REFER TO DETENTION WINDOW SCHEDULE IN THE A3.3.n SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

Dx — DETENTION EQUIPMENT ITEM; REFER TO DETENTION EQUIPMENT SCHEDULE ON DRAWING A7.1.1.

ARCHITECTURAL GENERAL NOTES

A. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.

B. ELEMENTS THAT ARE IDENTIFIED BY OTHER DISCIPLINES (e.g., CIVIL, STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL, ELECTRICAL) ELSEWHERE WITHIN THE ARCHITECTURAL SERIES OF DRAWINGS AND/OR SPECIFICATIONS, OR IDENTIFIED OR COVERED BY DEFAULTS (e.g., SIZES, THICKNESS, SPACING, MATERIALS) IN THE SPECIFICATIONS MAY NOT BE ANNOTATED (NOTE OR KEYNOTED) ON THESE DRAWINGS.

C. ELEMENTS IDENTIFIED IN "LEGENDS" AND/OR "GENERAL NOTES" MAY NOT BE NOTED IN DETAILS, OR SECTIONS, AS THESE ELEMENTS ARE IDENTIFIED IN THE LEGENDS (e.g. FACE BRICK, CMU, WINDOWS)

D. REFER TO "ASSEMBLIES" FOR MATERIALS AND COMPONENTS THAT MAKE UP THAT PARTICULAR ASSEMBLY (e.g., EXTERIOR WALL ASSEMBLIES, ROOF ASSEMBLIES, AND FIRE-RATED ASSEMBLIES). ONCE A PARTICULAR ASSEMBLY HAS BEEN IDENTIFIED ON ONE DRAWING, THAT SAME ASSEMBLY GRAPHIC SHALL APPLY TO ALL OTHER SIMILAR LOCATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE. PROVIDE THAT SAME ASSEMBLY AT THE SIMILAR LOCATION WHETHER THE ASSEMBLY GRAPHIC SYMBOL IS SHOWN OR NOT.

E. VERIFY ALL DIMENSIONS, INCLUDING DIMENSIONS ON STRUCTURAL DRAWINGS AND OTHER ARCHITECTURAL DRAWINGS. IMMEDIATELY NOTIFY ARCHITECT OF ANY DISCREPANCIES.

F. PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL EQUIPMENT INDICATED TO BE MOUNTED OR OTHERWISE REQUIRED TO BE MOUNTED TO THE FLOOR. WHERE PADS ARE NOT SHOWN, PROVIDE 6" THICK CONCRETE PADS W/ 3/4" CHAMFERED EDGES (ALL SIDES). REINFORCE WITH MESH EQUIVALENT TO FLOOR SLAB REINFORCING REQUIREMENTS.

ARCHITECTURAL MATERIALS LEGEND

- EARTH
- POROUS FILL
- CONCRETE
- FACE BRICK
- SPLIT-FACE BLOCK
- CONCRETE MASONRY UNIT
- GROUTED SOLID CONCRETE MASONRY UNIT

NOTE: PROVIDE 100% SOLID, PLANT-CAST UNITS WHERE CORE HOLES WOULD BE VISIBLE WITHIN FINISH SPACE (E.G., WINDOW SILLS)

- ARCHITECTURAL PRECAST CONCRETE
- CAST STONE MASONRY
- RIGID INSULATION
- BATT INSULATION
- SPRAYED POLYURETHANE FOAM
- WOOD SHIM
- WOOD BLOCKING - CONTINUOUS
- FINISHED WOOD
- PLYWOOD
- GYPSUM BOARD / SHEATHING
- STONE
- MINERAL WOOL

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09-29-2025

TOWN HALL RENOVATIONS

211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

PROJECT NO: 651455
DATE: September 29, 2025

REVISIONS	
DATE	DESCRIPTION

GENERAL ARCHITECTURAL INFORMATION

A0.1

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TERMINATION GENERAL NOTES

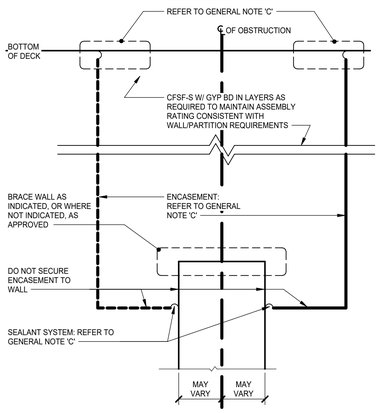
A. AT FIRE-, SMOKE-, AND ACOUSTICALLY RATED WALLS: SEAL ALL NON-OBSTRUCTED HEAD-OF-WALL CONDITIONS IN ACCORDANCE WITH JOINT SYSTEM MANUFACTURER 'S RECOMMENDATIONS BASED ON CONDITION ENCOUNTERED (E.G., CMU-TO-DECK (PARALLEL OR PERPENDICULAR TO FLUTES); OR CFSF-TO-DECK (PARALLEL OR PERPENDICULAR TO FLUTES) TO MAINTAIN ASSEMBLY RATING CONSISTENT WITH WALL/PARTITION REQUIREMENTS. BRACE WALL AS INDICATED OR REQUIRED.

B. AT ALL OTHER WALLS INDICATED TO EXTEND TO UNDERSIDE OF FLOOR/ROOF DECK/CAP: SEAL ALL NON-OBSTRUCTED HEAD-OF-WALL CONDITIONS IN ACCORDANCE WITH JOINT SYSTEM MANUFACTURER 'S RECOMMENDATIONS BASED ON CONDITION ENCOUNTERED (E.G., CMU-TO-DECK (PARALLEL OR PERPENDICULAR TO FLUTES); OR CFSF-TO-DECK (PARALLEL OR PERPENDICULAR TO FLUTES). BRACE WALL AS INDICATED OR REQUIRED.

C. AT ALL WALLS PREVENTED FROM TERMINATING AT THE UNDERSIDE OF FLOOR/ROOF DECK BY OBSTRUCTIONS, COMPLY WITH THE FOLLOWING:

- AT FIRE-, SMOKE-, AND ACOUSTICALLY-RATED WALLS: ENCASE OBSTRUCTION(S) TO MAINTAIN ASSEMBLY RATING CONSISTENT WITH WALL/PARTITION REQUIREMENTS.
- AT SECURITY WALLS: TERMINATE IN ACCORDANCE WITH SECURITY PARTITION REQUIREMENTS.
- AT OTHER WALLS: ENCASE OBSTRUCTION(S) ON ONE SIDE.
- SEAL ENCASEMENT TO WALL AND SEAL ENCASEMENT TO DECK IN ACCORDANCE WITH JOINT SYSTEM MANUFACTURER'S RECOMMENDATIONS AND TO MAINTAIN ASSEMBLY RATING CONSISTENT WITH WALL/PARTITION REQUIREMENTS.

TERMINATIONS



HEAD-OF-WALL TERMINATION @ OBSTRUCTION

OBSTRUCTION MAY VARY (BEAM, JOIST, GIRDER, CHANNEL, DUCTWORK, PIPING)



HEAD-OF-WALL TERMINATION @ NON-OBSTRUCTION

WALL JOINT GENERAL NOTES

A. LOCATE CONTROL JOINTS IN INTERIOR AND EXTERIOR WALLS AS INDICATED ON DRAWINGS.

B. JOINTS ARE INDICATED THUS ◄ ON PLANS AND ELEVATIONS.

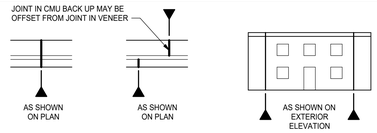
C. WALLS AND JOINT TYPES/DETAILS ARE DIAGRAMMATIC. ADJUST JOINT TYPES/DETAILS IN ACCORDANCE WITH ACTUAL FIELD CONDITIONS.

D. PROVIDE TESTED JOINT ASSEMBLIES AT FIRE-, SMOKE-, AND ACOUSTICAL-RATED WALLS.

E. WHEN USED HEREIN "RATED" MEANS: FIRE, SMOKE, AND/OR ACOUSTICAL.

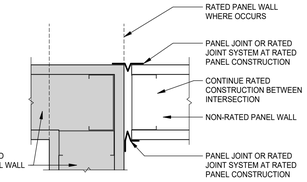
F. REFER TO SPECIFICATIONS FOR ADDITIONAL WALL JOINT REQUIREMENTS.

EXTERIOR WALL JOINT GRAPHICS



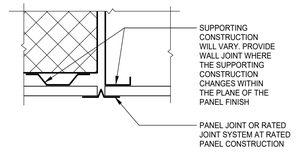
WALL JOINTS

RATED/ NON-RATED CFSF/ PANELS

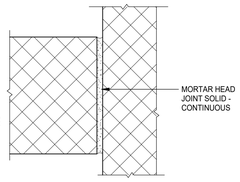


NOTE:
RATED WALL SHADED FOR CLARITY THIS DETAIL

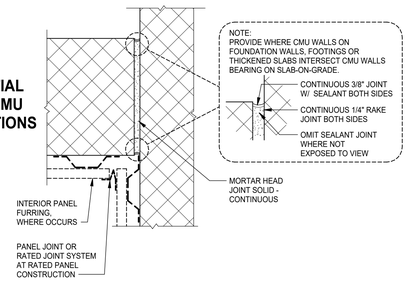
CMU/ CFSF



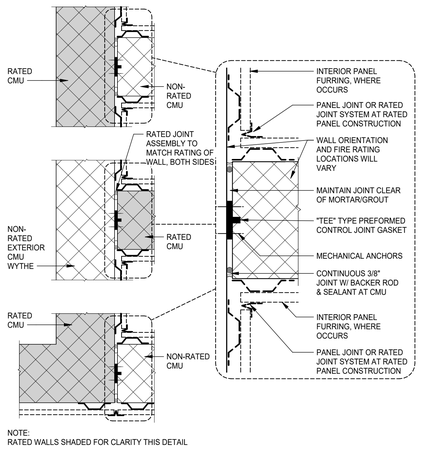
EQUAL BEARING CMU INTERSECTIONS



DIFFERENTIAL BEARING CMU INTERSECTIONS

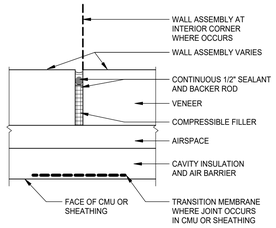


RATED/ NON-RATED CMU

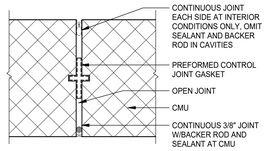


NOTE:
RATED WALLS SHADED FOR CLARITY THIS DETAIL

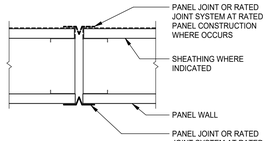
VENEER/ CAVITY



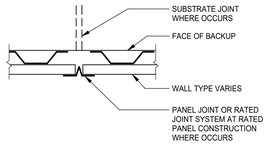
CMU



CFSF/ PANELS



PANEL



WALL/PARTITION TYPE GENERAL NOTES

A. PLAN DIMENSIONS ARE TO FACE OF WALL OR PARTITION. WHERE APPLIED FINISHES OCCUR-SUCH AS CERAMIC TILE-DIMENSIONS ARE TO FACE OF APPLIED FINISH. FOR WAINSCOTS, FLOOR PLAN DIMENSIONS ARE TO FACE OF WAINSCOT MATERIAL. APPLIED FINISHES ARE NOT ALLOWED TO REDUCE CLEAR DIMENSIONS. "APPLIED FINISHES" IN THIS CASE DO NOT INCLUDE TRIM, BASE, AND ACOUSTIC WALL PANELS.

B. EXTEND WALL/PARTITION ASSEMBLY COMPONENTS FULL HEIGHT OF ASSEMBLY.

C. ALL INTERIOR PARTITIONS: **P1** UNLESS INDICATED OTHERWISE.

D. REFER TO STRUCTURAL DRAWINGS AND RELATED SPECIFICATIONS FOR SOLID MASONRY, GROUTING, AND REINFORCEMENT REQUIREMENTS INCLUDING BUT MAY NOT BE LIMITED TO:

- MASONRY WALLS/PARTITIONS
- LINTELS
- LINTEL BEARING CONDITIONS
- BOND BEAMS
- SHELF BEARING CONDITIONS
- STRUCTURAL REINFORCING REQUIREMENTS
- CHANGES IN WYTHE

E. THE TERMS "WALL" AND "PARTITION" MAY BE USED INTERCHANGEABLY THROUGHOUT THE CONTRACT DOCUMENTS.

F. EXTEND ALL FIRE-, SMOKE-, INCIDENTAL USE-, AND ACOUSTICAL-RATED WALLS/PARTITIONS TO UNDERSIDE OF FLOOR DECK, ROOF DECK, STRUCTURAL ELEMENT ENCASEMENT OR SOLID CAP ABOVE.

- SEAL AND TERMINATE IN ACCORDANCE WITH JOINT SYSTEM TESTED ASSEMBLIES FOR RESPECTIVE TYPE OF WALLS/PARTITIONS.

H. PARTITIONS THAT DO NOT EXTEND TO UNDERSIDE OF DECK OR CAP ABOVE:

- EXTEND 4 INCHES MINIMUM ABOVE HIGHEST ADJACENT FINISH CEILING UNLESS INDICATED OTHERWISE.

I. DO NOT CONNECT TIES, ANCHORS, OR REINFORCING TO SINGLE CANTILEVERED FIRE WALL OR BETWEEN DOUBLE FIRE WALLS.

J. SEAL AROUND ALL PENETRATIONS.

K. COMPLY WITH TERMINATION, WALL JOINT, AND MISCELLANEOUS DETAILS FOR THOSE CONDITIONS WHERE APPLICABLE. COMPLY WITH REFERENCED STANDARDS WHERE DETAILS ARE NOT IDENTIFIED IN THE DRAWINGS.

L. WALL/PARTITION TYPES DO NOT ADDRESS WALL FINISHES. REFER TO FINISH SCHEDULE.

M. FINISHED SPACES: PROVIDE CHASES AROUND ALL EXPOSED VERTICAL COMPONENTS, INCLUDING BUT NOT LIMITED TO: DUCTWORK, PIPING, AND CONDUIT, UNLESS COMPONENTS ARE SPECIFICALLY INDICATED TO REMAIN EXPOSED. IF NOT OTHERWISE INDICATED, PROVIDE ***P2 (NEW)*** CHASE CONSTRUCTION.

- HOLD CHASES TIGHT TO COMPONENTS ALLOWING FOR ACCESS, INSULATION, AND TOLERANCES.
- EXTEND CHASES FROM FLOOR TO 4 INCHES MINIMUM ABOVE FINISH CEILING OR IF NO CEILING IS INDICATED, EXTEND CHASES TO UNDERSIDE OF FLOOR DECK, ROOF DECK, OR SOLID CAP ABOVE AND TERMINATE ACCORDINGLY.

N. PROVIDE BACKER BOARD/UNIT OF SAME THICKNESS INDICATED IN LIEU OF GYPSUM BOARD PANEL AT PORTIONS OF WALLS/PARTITIONS TO RECEIVE TILE.

O. PROVIDE SOUND ATTENUATION BATTS AT ALL NEW PARTITIONS, RATED AND NON-RATED.

PANEL WALL/PARTITION TYPES

REPRESENTED BY Xnn

MARK	FIRE RATED ASSEMBLY (REFER TO LS 1.1 FOR LEGEND)	REMARKS	INFORMATION
P1	--	INFILL	EXISTING GYP WALL BOARD WOOD STUD
P2	--	NEW	2 1/8" 1 1/2" METAL FURRING NEW 5/8" GYP WALL BOARD
P3	--	NEW	4 7/8" 5/8" GYP WALL BOARD, EA SIDE 3 5/8" CFSF SOUND ATTENUATING BATTS

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09-29-2025

TOWN HALL RENOVATIONS

211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

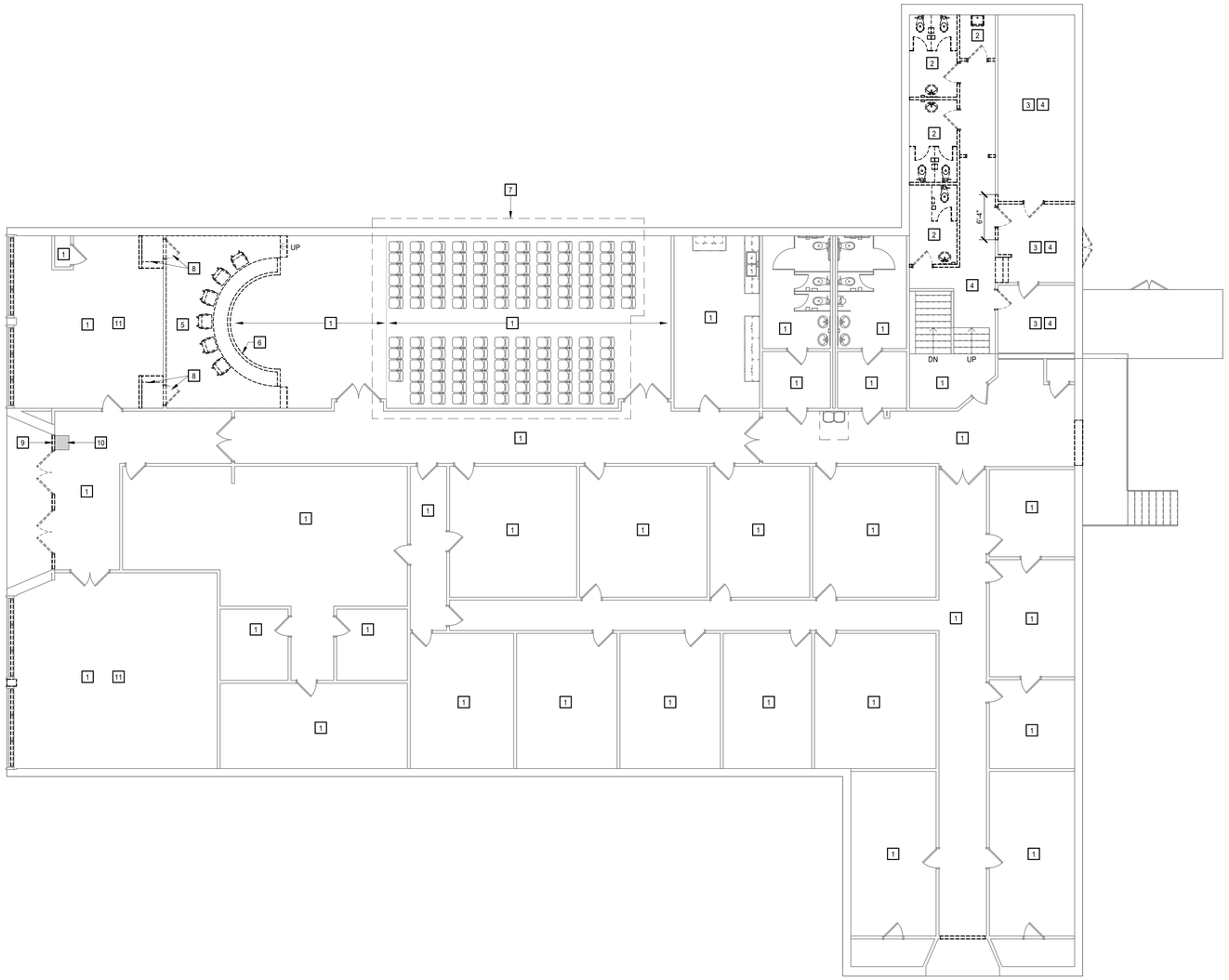
PROJECT NO: 651455
DATE: September 29, 2025

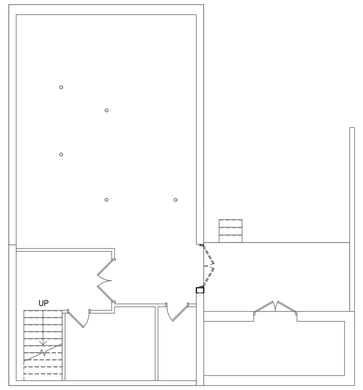
REVISIONS	
DATE	DESCRIPTION

WALL/PARTITION TYPES, WALL JOINTS AND TERMINATIONS

A0.2

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N

2 A1.1

BASEMENT DEMOLITION PLAN

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

DEMOLITION PLAN LEGEND

APPLIES TO DRAWINGS A1.2.1 - A1.2.n

- EXISTING PARTITION/ WALL/ ITEM TO REMAIN
- REMOVE EXISTING PARTITION/WALL/ITEM
- REMOVE EXISTING WINDOW ASSEMBLY AND FRAMING, INCLUDING ANCHORS
- REMOVE EXISTING DOOR AND FRAME ASSEMBLY INCLUDING DOOR HARDWARE, ANCHORS, AND THRESHOLD (WHERE OCCURS).
- REMOVE EXISTING PLUMBING FIXTURE. REFER TO PLUMBING DEMOLITION PLAN FOR ADDITIONAL INFORMATION.

DEMOLITION PLAN GENERAL NOTES

A. DEMOLITION WORK NOTED ON THESE DRAWINGS INVOLVES THE REMOVAL OF EXISTING CONSTRUCTION UNDER THIS CONTRACT, AND MUST BE COORDINATED WITH CORRESPONDING RENOVATION FLOOR PLANS AN DETAILS. REMOVE EXISTING CONSTRUCTION AS NEEDED FOR FINISH CONSTRUCTION AND NEW WORK TO CONFORM TO CONTRACT DOCUMENTS.

B. ALL EXISTING INFORMATION WAS DETERMINED FROM DRAWINGS PROVIDED BY OWNER AND NON-DESTRUCTIVE OBSERVATIONS. BIDDERS SHALL REVIEW EXISTING CONDITIONS TO THE EXTENT THAT AFFECTS THE SCOPE OF DEMOLITION AND NEW WORK.

C. REFER TO APPLICABLE MECHANICAL, AND ELECTRICAL DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.

D. REFER TO DIVISION 1 AND 2 SPECIFICATIONS FOR ADDITIONAL INFORMATION ON DEMOLITION WORK. COORDINATE DEMOLITION WORK WITH OTHER TRADES.

E. WHERE DEMOLITION WORK EXPOSES SURFACES SCHEDULED TO RECEIVE NEW FINISH, THE EXPOSED SURFACE SHALL BE PREPARED AS REQUIRED BY SPECIFICATIONS AND MANUFACTURER FOR ACCEPTABLE INSTALLATION OF THE NEW WORK.

F. ALL EXPOSED SURFACES AFFECTED BY THE DEMOLITION WORK SHALL BE PATCHED TO MATCH EXISTING ADJACENT SURFACE UNLESS NOTED OTHERWISE.

G. KEYNOTE WITHOUT A LEADER APPLIES TO ENTIRE SPACE OR ROOM IN WHICH IT IS LOCATED.

DEMOLITION PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A1.2.1 - A1.2.nn

1	REMOVE CEILING GRIDS, FLOOR FINISH, AND WALL BASE
2	REMOVE FLOOR FINISH, WALL FINISH, AND WALL BASE
3	REMOVE WALL FINISH, AND WALL BASE
4	WOOD FLOORING TO REMAIN
5	REMOVE ELEVATED PLATFORM IN ITS ENTIRETY
6	REMOVE AND SALVAGE DAIS
7	REMOVE AND SALVAGE FIXED SEATING AS REQ'D TO INSTALL NEW FINISH FLOOR
8	REMOVE STAIRS AND ELEVATED LANDING, REMOVE AND SALVAGE DOOR
9	REMOVE AND SALVAGE DROP SLOT, TURN OVER TO OWNER
10	REMOVE AND SALVAGE BASE CABINET WITH DOOR OPERATOR, TURN OVER TO OWNER
11	ACOUSTIC WALL PANELS TO REMAIN

N

1 A2.1 A1.1

MAIN FLOOR DEMOLITION PLAN

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

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TOWN HALL RENOVATIONS

211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

PROJECT NO: 651455
DATE: September 29, 2025

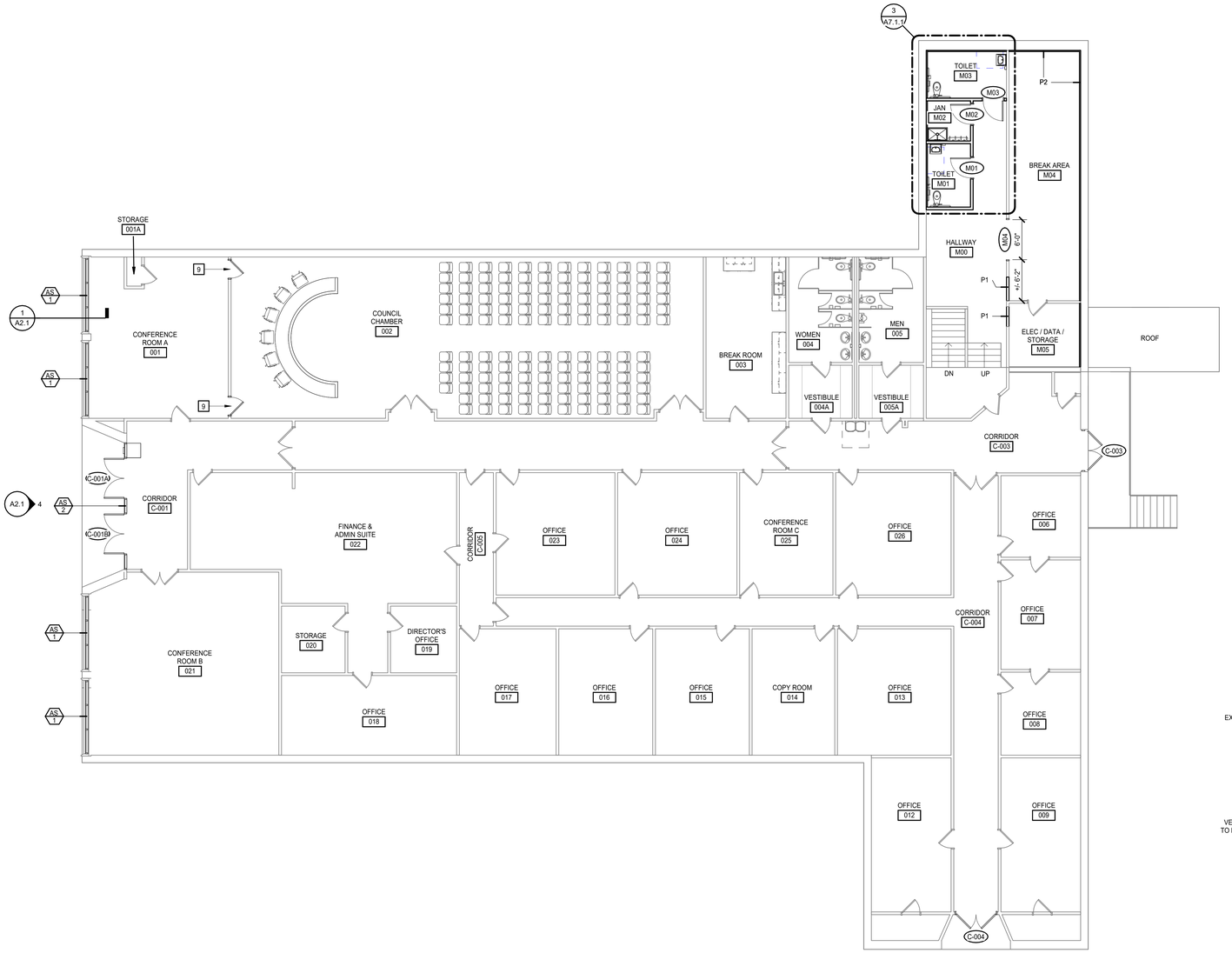
REVISIONS

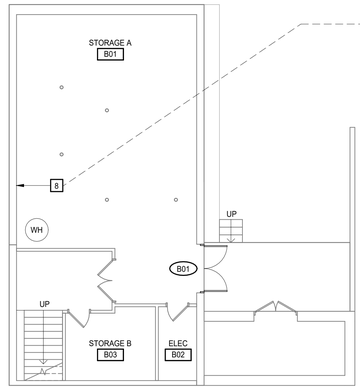
DATE	DESCRIPTION

DEMOLITION PLANS

A1.1

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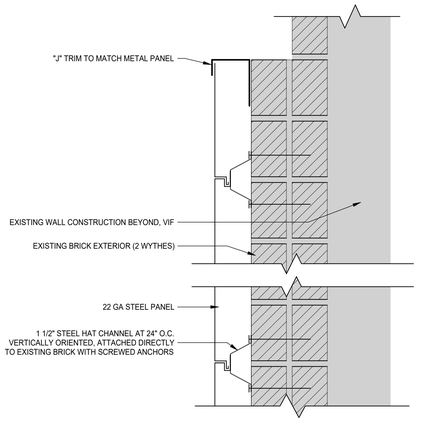




N

3 BASEMENT PLAN (3 / A2.1)
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"



2 PLAN DETAIL (2 / A2.1 A2.1)
3" = 1'-0"

0" 1" 2" 4" 8"
3" = 1'-0"

BUILDING ELEVATION KEYNOTES

REPRESENTED BY n
APPLIES TO DRAWINGS ON A2.1

1	METAL PANEL OVER EXISTING BRICK
2	REPLACE STOREFRONT
3	PAINT EXISTING BRICK (PAINT TYPE "A")
4	PAINT EXISTING CANOPY (PAINT TYPE "B")
5	PAINT EXISTING STUCCO (PAINT TYPE "B")
6	SOLID PANEL
7	EXTERIOR CYLINDRICAL SCONCE UP/DOWN LIGHTING

FLOOR PLAN KEYNOTES

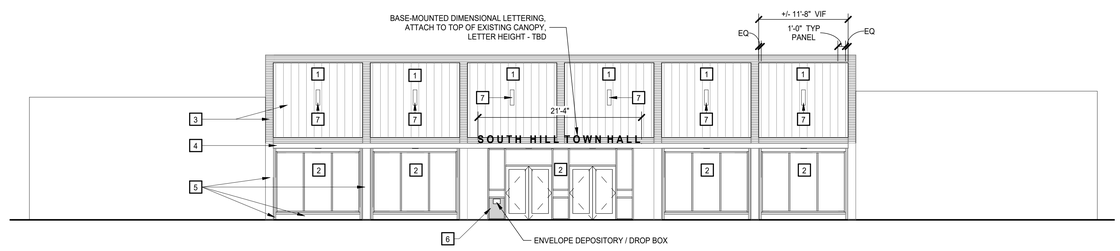
REPRESENTED BY n
APPLIES TO DRAWINGS ON A2.1

8	REPAIR DAMAGED CMU
9	INFILL WALL ABOVE DOOR, MATCH ADJACENT CONSTRUCTION

N

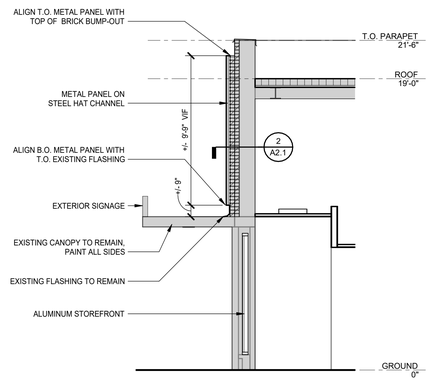
5 MAIN FLOOR PLAN (5 / A2.1 A2.1)
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"



4 WEST ELEVATION (STREET SIDE) (4 / A2.1 A2.1)
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"



1 WALL SECTION AT MAIN ENTRY (1 / A2.1 A2.1)
1/4" = 1'-0"

0' 1' 2' 4' 8'
1/4" = 1'-0"

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COMMONWEALTH OF VIRGINIA
CHRISTOPHER J. ROMAN
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ARCHITECT
09-29-2025

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FLOOR PLANS, SECTION, EXTERIOR ELEVATION

A2.1

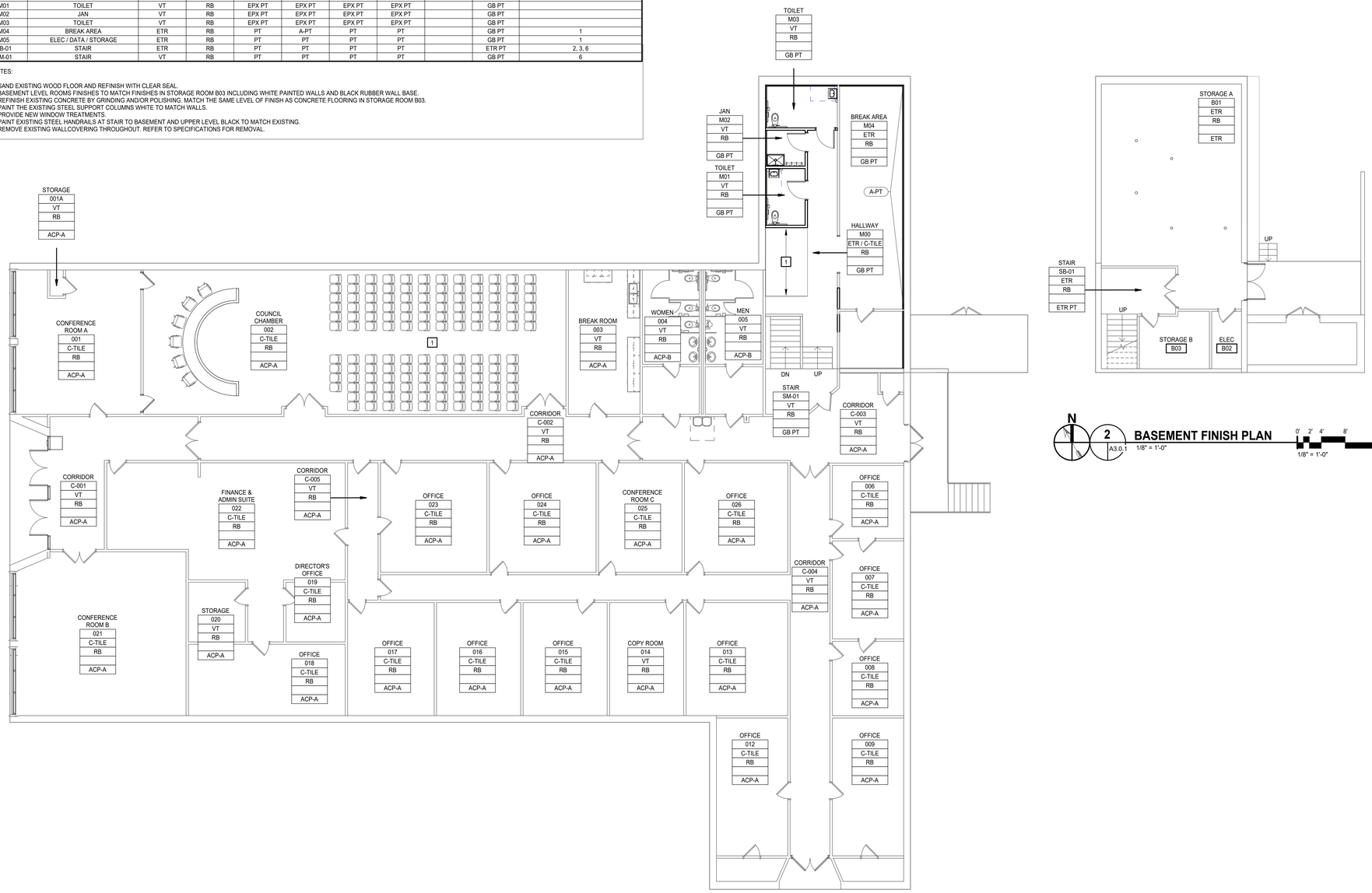
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FINISH SCHEDULE

ROOM #	ROOM NAME	FLOOR FINISH	WALL BASE	WALLS				WAINSCOT	CEILING	NOTES
				NORTH	EAST	SOUTH	WEST			
001	CONFERENCE ROOM A	C-TILE	RB	PT	PT	PT	PT		ACP-A	5
001A	STORAGE	VT	RB	PT	PT	PT	PT		ACP-A	
002	COUNCIL CHAMBER	C-TILE	RB	PT	PT	PT	PT		ACP-A	
003	BREAK ROOM	VT	RB	PT	PT	PT	PT		ACP-A	
004	WOMEN	VT	RB	EPX PT	EPX PT	EPX PT	EPX PT		ACP-B	
004A	VESTIBULE	VT	RB	PT	PT	PT	PT		ACP-A	
005	MEN	VT	RB	EPX PT	EPX PT	EPX PT	EPX PT		ACP-B	
005A	VESTIBULE	VT	RB	PT	PT	PT	PT		ACP-A	
006	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
007	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
008	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
009	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
010	STORAGE	VT	RB	PT	PT	PT	PT		ACP-A	
011	STORAGE	VT	RB	PT	PT	PT	PT		ACP-A	
012	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
013	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
014	COPY ROOM	VT	RB	PT	PT	PT	PT		ACP-A	
015	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
016	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
017	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
018	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
019	DIRECTOR'S OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
020	STORAGE	VT	RB	PT	PT	PT	PT		ACP-A	
021	CONFERENCE ROOM B	C-TILE	RB	PT	PT	PT	PT		ACP-A	5
022	FINANCE & ADMIN SUITE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
023	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
024	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
025	CONFERENCE ROOM C	C-TILE	RB	PT	PT	PT	PT		ACP-A	
026	OFFICE	C-TILE	RB	PT	PT	PT	PT		ACP-A	
B01	STORAGE A	ETR	RB	PT	PT	PT	PT		ETR	2, 3, 4
B02	ELEC	ETR	RB	PT	PT	PT	PT		ETR	2, 3
B03	STORAGE B	VT	RB	PT	PT	PT	PT		ETR	
C-001	CORRIDOR	VT	RB	PT	PT	PT	PT		ACP-A	
C-002	CORRIDOR	VT	RB	PT	PT	PT	PT		ACP-A	
C-003	CORRIDOR	VT	RB	PT	PT	PT	PT		ACP-A	
C-004	CORRIDOR	VT	RB	PT	PT	PT	PT		ACP-A	
C-005	CORRIDOR	VT	RB	PT	PT	PT	PT		ACP-A	
M00	HALLWAY	ETR / C-TILE	RB	PT	PT	PT	PT		GB PT	1
M01	TOILET	VT	RB	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
M02	JAN	VT	RB	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
M03	TOILET	VT	RB	EPX PT	EPX PT	EPX PT	EPX PT		GB PT	
M04	BREAK AREA	ETR	RB	PT	A-PT	PT	PT		GB PT	1
M05	ELEC / DATA / STORAGE	ETR	RB	PT	PT	PT	PT		GB PT	1
SB-01	STAIR	ETR	RB	PT	PT	PT	PT		ETR PT	2, 3, 6
SM-01	STAIR	VT	RB	PT	PT	PT	PT		GB PT	6

NOTES:

1. SAND EXISTING WOOD FLOOR AND REFINISH WITH CLEAR SEAL.
2. BASEMENT LEVEL ROOMS FINISHES TO MATCH FINISHES IN STORAGE ROOM B03 INCLUDING WHITE PAINTED WALLS AND BLACK RUBBER WALL BASE.
3. REFINISH EXISTING CONCRETE BY GRINDING AND/OR POLISHING. MATCH THE SAME LEVEL OF FINISH AS CONCRETE FLOORING IN STORAGE ROOM B03.
4. PAINT THE EXISTING STEEL SUPPORT COLUMNS WHITE TO MATCH WALLS.
5. PROVIDE NEW WINDOW TREATMENTS.
6. PAINT EXISTING STEEL HANDRAILS AT STAIR TO BASEMENT AND UPPER LEVEL BLACK TO MATCH EXISTING.
7. REMOVE EXISTING WALLCOVERING THROUGHOUT. REFER TO SPECIFICATIONS FOR REMOVAL.



FINISH SCHEDULE GENERAL NOTES

A. FINISH SCHEDULE DESCRIBES ONLY THE BASIC OR PREDOMINANT SURFACE FINISH.

B. PROVIDE SAME FINISHES AS THE ADJACENT SPACE IN ALCOVES AND CONTINUOUS SPACES WITHOUT DESIGNATED SPACE NUMBERS.

C. CASEWORK FINISHES ARE NOT NOTED IN THE FINISH SCHEDULE. REFER TO CASEWORK ELEVATIONS AND SPECIFICATIONS FOR MATERIALS AND FINISHES.

D. DIRECTIONAL WALL FINISH INDICATORS (NORTH, EAST, SOUTH, WEST) REFER TO THE "PLAN" NORTH ORIENTATION.

E. BULKHEADS AND SOFFITS MAY NOT BE INDICATED IN FINISH SCHEDULES. REFER TO RCP DETAILS, AND OTHER DOCUMENTS FOR EXTENT.

F. PROVIDE CONTINUOUS SEALANT BETWEEN INTERIOR SLAB-ON-GRADE AND VERTICAL ELEMENT WHERE JOINT IS NOT CONCEALED BY FINISH BASE OR OTHER CONSTRUCTION

G. REFER TO SPECIFICATIONS FOR INFORMATION ON FINISH FIRE CLASSIFICATION RATING.

H. PAINT ALL EXPOSED ELEMENTS (SUCH AS PIPING AND CONDUITS) TO MATCH ADJACENT COLOR (HIDE & BLEND).

FINISH SCHEDULE NOTES

1. REFER TO SPECIFICATION FOR FLOOR PATTERNS.
2. REFER TO SPECIFICATION FOR WALL PATTERNS.

FINISH PLAN GENERAL NOTES

A. REFER TO A0.1 FOR ABBREVIATION LEGEND.

B. WHERE ONE FINISH IS LISTED ON ALL WALLS OF THE ROOM, THE FINISH PLANS DO NOT SHOW EXTENT OF FINISH. FINISH PLANS AND ELEVATIONS SHOW EXTENT OF MATERIALS WHERE FINISH SCHEDULE LISTS MULTIPLE FINISHES IN ONE ROOM

C. DIRECTIONAL WALL FINISH INDICATORS (NORTH, SOUTH, EAST, WEST) REFER TO THE 'PLAN' NORTH ORIENTATION.

D. ALL EXISTING WALLS WITH GWB TO RECEIVE NEW PAINT. COLOR TBD.

E. ALL ROOMS TO RECEIVE NEW WALL BASE AND NEW FLOOR FINISH UNLESS OTHERWISE NOTED.

FINISH PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A3.0.1 - A3.0.n

1	CARPET TILE

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DATE	DESCRIPTION

FINISH PLAN & SCHEDULE

A3.0.1

11/5/2025 11:51:28 AM

DOOR SCHEDULE

NUMBER	DOOR TYPE	SIZE (NOMINAL)	DOOR MATL	DOOR LOUVER	DOOR UC	DOOR GLAZING TYPE	FRAME TYPE	FRAME NUMBER	FRAME SECTIONS	FRAME HEAD DETAIL	FRAME JAMB DETAIL	FRAME SILL DETAIL	HARDWARE SET	FIRE RATING	NOTES
B01	F	PR 3'-0" x 7'-0" x 1 3/4"	STL	-	-	-	STL	2	A	8	8	8	3	-	1
C-001A	E1	PR 3'-0" x 7'-0" x 2"	ALUM	-	-	2	AS	2	-	-	-	-	2	-	3
C-001B	E1	PR 3'-0" x 7'-0" x 2"	ALUM	-	-	2	AS	2	-	-	-	-	1	-	3
C-003	E1	PR 3'-0" x 7'-0" x 2"	ALUM	-	-	EXISTING	AS	-	-	-	-	-	6	-	5
C-004	E1	PR 3'-0" x 7'-0" x 2"	ALUM	-	-	EXISTING	AS	-	-	-	-	-	6	-	5
M01	F	3'-0" x 7'-0" x 1 3/4"	WD	-	-	-	STL	1	A	8	8	8	4	-	2
M02	F	3'-0" x 7'-0" x 1 3/4"	WD	-	-	-	STL	1	A	8	8	8	5	-	2
M03	F	3'-0" x 7'-0" x 1 3/4"	WD	-	-	-	STL	1	A	8	8	8	4	-	2
M04	--	6'-0" x 7'-0" x 0"	--	-	-	-	STL	1	C	8	8	8	-	-	4

NOTE:

1. EXTERIOR DOOR
2. INTERIOR DOOR
3. ALUMINUM STOREFRONT DOOR
4. CASED OPENING
5. EXISTING EXTERIOR ALUMINUM STOREFRONT DOOR TO RECEIVE NEW KEY-FOB READER

GENERAL NOTES

A. UNLESS INDICATED OTHERWISE, ALL DETAIL NUMBERS IN THE DOOR AND FRAME SCHEDULE FOR HEAD, JAMB AND SILL CONDITIONS REFER TO DRAWINGS A3.1.1 - A3.1.n.

B. DOOR AND FRAME DETAILS INDICATE GENERAL CHARACTERISTICS OF DOOR AND FRAME SIZES AND COMPONENTS AND MAY NOT INDICATE EXACT FIELD CONDITIONS OR REQUIREMENTS. COORDINATE DETAILS WITH OTHER DRAWINGS AND SPECS TO DETERMINE ALL COMPONENTS (E.G., SEALANTS, ANCHORS, HARDWARE, LINTELS, CLIPS) REQUIRED FOR COMPLETE AND FUNCTIONAL INSTALLATION.

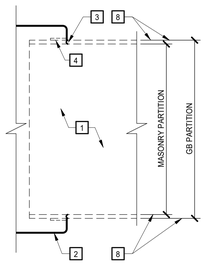
C. DOOR SWINGS ON FLOOR PLANS TAKE PRECEDENCE OVER SWINGS INDICATED ELSEWHERE (E.G., ELEVATIONS).

DOOR AND FRAME DETAIL KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.1.1

1	ANCHORAGES, REINFORCING, SPECIFIC PARTITION CONSTRUCTION AND/OR LINTELS ARE NOT SHOWN FOR CLARITY.
2	REFER TO FRAME SECTION IN DOOR SCHEDULE FOR TYPE.
3	SEALANT, ALL SIDES - TOOL TO 90°.
4	BACKBEND RETURN @ GB LOCATIONS ONLY.
5	9/16" @ MAS; 1/2" @ GB.
6	1/4" @ JAMBS, UNO; DIMENSION @ HEAD & SILL VARIES.
7	BULLNOSE @ CMU JAMBS & SILLS.
8	0" @ GB LOCATIONS; 1/16" @ MAS LOCATIONS.

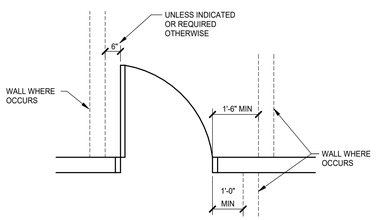


8 INTERIOR WRAP HEAD/JAMB/SILL

6" = 1'-0"

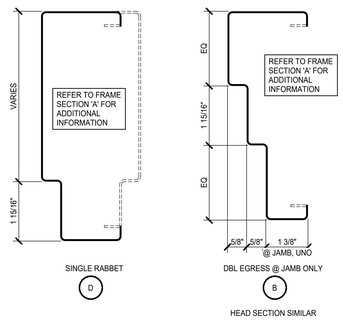
0" ½" 1" 2" 4"

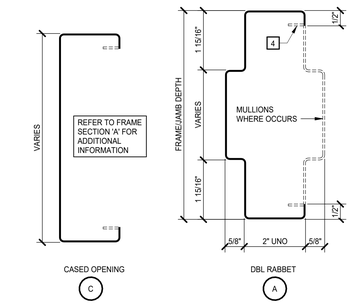
6" = 1'-0"



7 MANEUVERING CLEARANCE AT DOORS

NO SCALE

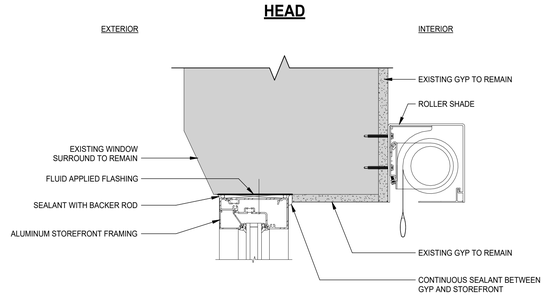




1. ALL FRAME/JAMB DEPTHS, OTHER THAN WRAP CONDITIONS, SHALL BE 4 7/8, UNO.
2. ALL FRAME/JAMB DEPTHS AT WRAP CONDITIONS SHALL BE SIZED TO SUIT PARTITION.
3. DOORS, PANELS, GLAZING, STOPS, AND OTHER FRAME INFILLS ARE NOT SHOWN IN FRAME SECTIONS AS THEY VARY - PROVIDE SAME WHERE INDICATED.

6 STEEL FRAME SECTIONS

NO SCALE

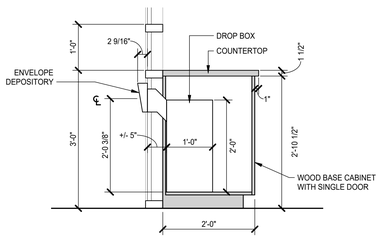


4 SECTION DETAIL @ AS1 - TYP

3" = 1'-0"

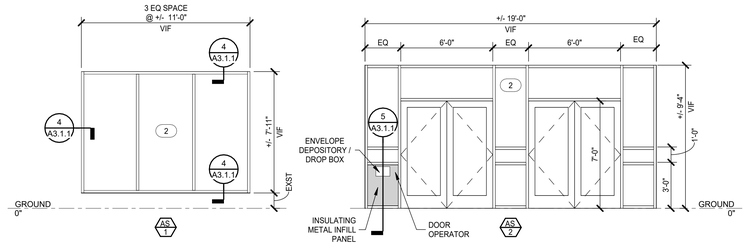
0" 1" 2" 4" 8"

3" = 1'-0"



5 ENVELOPE DEPOSITORY / DROP BOX SECTION

3/4" = 1'-0"

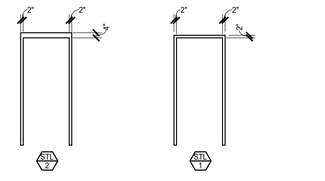


3 FRAME ELEVATIONS

1/4" = 1'-0"

0" 1" 2" 4" 8"

1/4" = 1'-0"

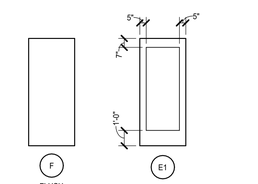


2 DOOR FRAME TYPES

1/4" = 1'-0"

0" 1" 2" 4" 8"

1/4" = 1'-0"



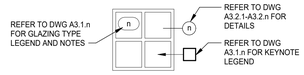
1 DOOR TYPES

1/4" = 1'-0"

0" 1" 2" 4" 8"

1/4" = 1'-0"

GENERAL NOTES



A. GC TO VERIFY ALL EXISTING WINDOW / STOREFRONT OPENINGS IN FIELD

GLAZING TYPES

REPRESENTED BY [n]

1. 1/4" CLEAR
2. 1" TINTED INSULATING
3. 1" INSULATING METAL INFILL PANEL

NOTES:

1. ALL GLAZING IN INTERIOR FRAMES SHALL BE TYPE 1, UNO
2. ALL GLAZING IN EXTERIOR FRAMES SHALL BE TYPE 2, UNO
3. GLAZE ALL OPENINGS IN FRAMES UNLESS SPECIFICALLY INDICATED OTHERWISE
4. ALL GLAZING SHALL BE SAFETY GLASS UNLESS INDICATED OTHERWISE

DOOR, FRAME AND GLAZING TYPE KEYNOTES

REPRESENTED BY [n]

APPLIES TO DRAWINGS A3.1.1 - A3.1.n

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DOOR AND FRAME SCHEDULE, TYPES, & DETAILS

A3.1.1

11/5/2025 11:51:29 AM

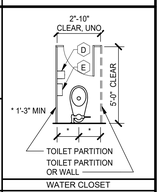
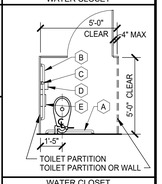
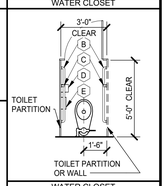
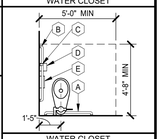
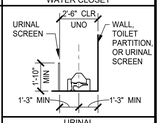
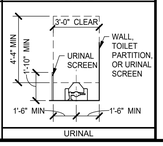
TOILET ASSEMBLIES, SCHEDULE AND ENLARGED PLAN GENERAL NOTES

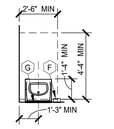
A. PLAN DIMENSIONS ARE TO FACE OF WALL OR PARTITION. WHERE APPLIED FINISHES OCCUR-SUCH AS CERAMIC TILE-DIMENSIONS ARE TO FACE OF APPLIED FINISH. FOR WAINSCOTS, FLOOR PLAN DIMENSIONS ARE TO FACE OF WAINSCOT MATERIAL. APPLIED FINISHES ARE NOT ALLOWED TO REDUCE CLEAR DIMENSIONS. "APPLIED FINISHES" IN THIS CASE DO NOT INCLUDE TRIM, BASE, AND ACOUSTIC WALL PANELS.

B. CLEAR DIMENSIONS ARE TO FACE OF APPLIED WALL AND PARTITION FINISHES.

TOILET ASSEMBLIES

APPLIES TO DRAWINGS A7.1.1
REPRESENTED BY (TAn)

MARK	REMARKS	PLAN
TA1		 WATER CLOSET
TA2	OMIT (E)	
BARRIER FREE TA3		 WATER CLOSET
BARRIER FREE TA4	OMIT (E)	
BARRIER FREE TA5		 WATER CLOSET
BARRIER FREE TA6	OMIT (E)	
BARRIER FREE TA7		 WATER CLOSET
BARRIER FREE TA8	OMIT (E)	
TA9		 URINAL
BARRIER FREE TA10		 URINAL

MARK	REMARKS	PLAN
BARRIER FREE TA11	CENTER (G) OVER LAVATORY	 LAVATORY

LEGEND NOTES:

A. HANDING/ORIENTATION MAY VARY. REFER TO PLANS FOR PROPER ORIENTATION.

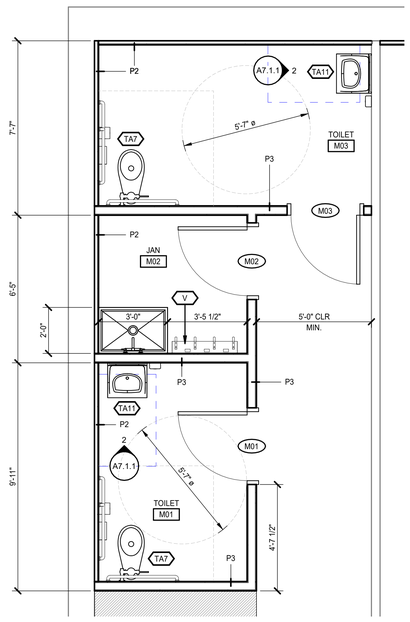
B. PLUMBING FIXTURE GRAPHICS IN THIS LEGEND ARE REPRESENTATIVE ONLY. ACTUAL PLUMBING FIXTURES MAY VARY.

C. PROVIDE TOILET COMPARTMENT COAT HOOK WITH BUMPER, MOUNTED CENTERED ON INSIDE FACE OF TOILET COMPARTMENT DOORS, AT 3'-11" TO TOP

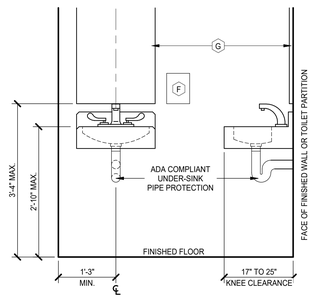
TOILET ACCESSORIES SCHEDULE

MARK	DESCRIPTION	MOUNTING HEIGHT	REMARKS
A	36" HORIZONTAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
B	42" HORIZONTAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
C	18" VERTICAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
D	TOILET TISSUE DISPENSER	REFER TO WATER CLOSET ELEVATIONS	
E	SANITARY NAPKIN DISPOSAL	REFER TO WATER CLOSET ELEVATIONS	
F	SOAP DISPENSER	3'-4" AFF TO DISPENSING OUTLET	
G	MIRROR (18" x 36"), OVER LAV AND COUNTERTOP	3'-4" AFF TO BOTTOM OF REFLECTIVE SURFACE	
V	MOP & BROOM HOLDER	5'-0" AFF TO TOP OF SHELF	

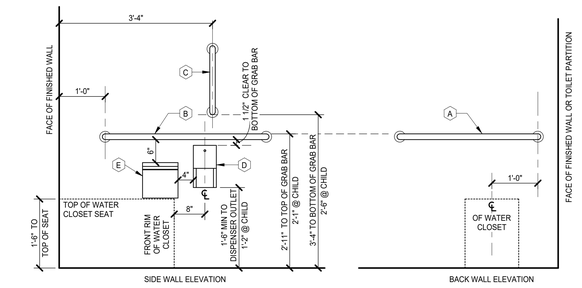
1. ACCESSORY ITEMS ARE IDENTIFIED BY ⬡ ON PLANS. LETTERS CORRESPOND TO SCHEDULE ABOVE.
2. ACTUAL DIMENSIONS OF ACCESSORIES MAY VARY. COORDINATE DIFFERENCES, IF ANY.
3. REFER TO ALL CASEWORK ELEVATIONS FOR ADDITIONAL TOILET ACCESSORY LOCATIONS.
4. PROVIDE MOP AND BROOM HOLDER W/ SHELF ⬡ AT ALL CUSTODIAL/JANITORIAL SINKS. MOUNT AT 5'-0" AFF TO CENTERLINE AND LOCATE ON SIDE WALL OF SINK (NOT ON WALL ABOVE FAUCET).
5. PROVIDE ROBE HOOK ON INTERIOR FACE OF ALL TOILET ROOM DOORS WHEREIN ONLY ONE WATER CLOSET IS PROVIDED. MOUNT AT 3'-11" AFF TO TOP.



3 TYP A7.1.1 **ENLARGED TOILET PLAN** 3/8" = 1'-0"



2 TYP A7.1.1 **KITCHEN HAND SINK DETAIL** 3/4" = 1'-0"



1 TYP A7.1.1 **WATER CLOSET ELEVATIONS** 3/4" = 1'-0"

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09-29-2025

TOWN HALL RENOVATIONS

211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

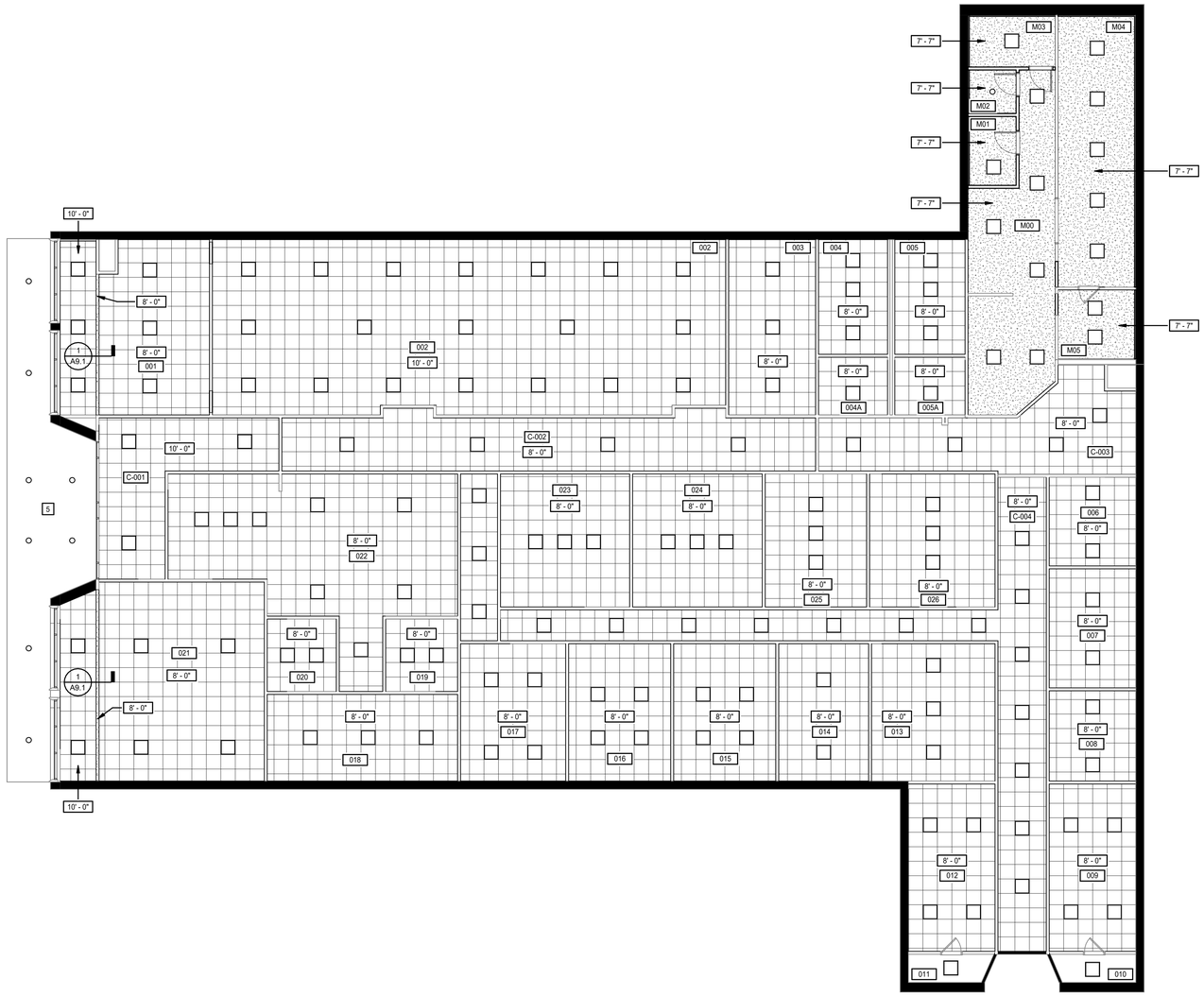
PROJECT NO: 651455
DATE: September 29, 2025

REVISIONS	
DATE	DESCRIPTION

TOILET ASSEMBLIES, SCHEDULE AND ENLARGED PLANS

A7.1.1

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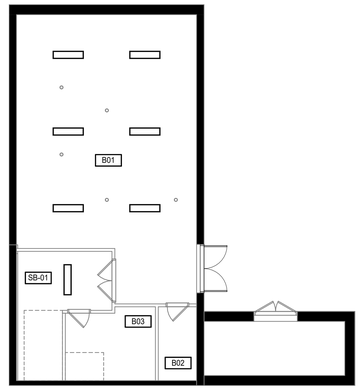
2 A2.1 A9.1

MAIN FLOOR REFLECTED CEILING PLAN

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"



N

3 A9.1

BASEMENT

1/8" = 1'-0"

0' 2' 4' 8' 16'

1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

APPLIES TO DRAWINGS A9.1.n - A9.1.n

REFER TO M, E & FP DRAWINGS FOR REFLECTED CEILING PLAN SYMBOLS NOT INDICATED BELOW

A101 — SPACE NUMBER

nn'-nn" — CEILING HEIGHT, AFF UNO

INTERIOR APPLICATIONS: GYPSUM BOARD CEILING

EXTERIOR APPLICATIONS: GYPSUM SOFFIT BOARD OR GYPSUM SHEATHING

2'-0" x 2'-0" LAY-IN ACOUSTICAL CEILING PANELS IN SUSPENDED GRID

AP — ACCESS PANEL

WITH OPENING — EXTERIOR WALL / PARTY WALL

WITH OPENING — INTERIOR WALL/PARTITION TO UNDERSIDE OF DECK

WITH OPENING — INTERIOR WALL/PARTITION TO CAP ABOVE OR TERMINATES ADJACENT TO A RATED HORIZONTAL ASSEMBLY

INTERIOR WALL/PARTITION 4" MIN ABOVE HIGHEST ADJACENT CEILING. IF NECESSARY TO ACHIEVE RESULTS DESIRED, EXTEND WALL HEIGHT SO WALL BRACING IS NOT EXPOSED TO VIEW IN FINISHED SPACES

WITH OPENING — INTERIOR WALL/PARTITION TO UNDERSIDE OF CEILING

EXISTING TO REMAIN, VERIFY VERTICAL EXTENTS WHERE THE HEIGHT IMPACTS THE WORK

REFLECTED CEILING PLAN/DETAIL GENERAL NOTES

A. CEILING HEIGHTS INDICATED ON PLAN ARE INTENDED TO MATCH EXISTING CEILING HEIGHTS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

B. DRAWINGS INDICATE GRID LAYOUT DIAGRAMMATICALLY. REFER TO SPECIFICATIONS FOR SPECIFIC GRID LAYOUT CRITERIA AT PERIMETER CONDITIONS THAT MAY DIFFER FROM GRID LAYOUT INDICATED ON DRAWINGS.

C. CENTER CEILING MOUNTED ITEMS WITHIN CEILING PANELS, UNLESS INDICATED OTHERWISE.

D. IF ADDITIONAL SPRINKLER HEADS ARE REQUIRED TO SATISFY CODE OR COVERAGE DENSITIES (OTHER THAN THOSE THAT MAY BE INDICATED), PROVIDE ADDITIONAL SPRINKLER HEADS AT NO ADDITIONAL COST AND OBTAIN APPROVAL OF ARCHITECT FOR LOCATION OF SUCH HEADS, IF ANY.

E. DRAWINGS INDICATE LIGHTING FIXTURE LAYOUT DIAGRAMMATICALLY. REFER TO LIGHTING PLAN & SCHEDULE BY ELECTRICAL ENGINEER.

F. COORDINATE CEILING INSTALLATION WITH LAYOUT OF EXISTING SPRINKLER HEADS TO REMAIN.

REFLECTED CEILING PLAN KEYNOTES

REPRESENTED BY n

APPLIES TO DRAWINGS A9.1.1 - A9.1.n

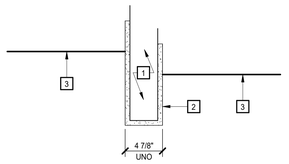
1 CFSF

2 5/8" GYP BD, TERMINATE 4" ABV FIN CLG

3 FIN CLG: FINISH AND/OR HEIGHT AFF VARIES

4 GYP BD: EXTEND FULL HEIGHT, UNLESS INDICATED OTHERWISE

5 SOFFIT ETR



1 A9.1 A9.1

BULKHEAD DETAILS

1 1/2" = 1'-0"

0" 3" 6" 1' 1'-4"

1½" = 1'-0"

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ARCHITECT
09-29-2025

TOWN HALL RENOVATIONS

211 S. MECKLENBURG AVE, SOUTH HILL, VA 23970
TOWN OF SOUTH HILL

PROJECT NO: 651455
DATE: September 29, 2025

REVISIONS

DATE	DESCRIPTION

REFLECTED CEILING PLANS

A9.1

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GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR.
   SPC- CURRENT STATE PLUMBING CODE (VIRGINIA PLUMBING CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD-PARTY AGENCY. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPC AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
8. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
10. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
11. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
12. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE SPC. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
13. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT.
14. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH SPC, SECTIONS 312.2, 312.3, AND 312.5.
15. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
16. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER, THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS, AND EQUIPMENT UNDER THIS CONTRACT.
17. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.
18. ALL PLUMBING SCOPE IS WITHIN FIVE (5) FEET OF EXTERIOR OF BUILDING OR AS SHOWN ON PLANS.

METHODS:

1. EXTEND DOMESTIC WATER PIPE AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2 SPC. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER-PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE SPC. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR-EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH 608.14 SPC. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
9. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
10. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
11. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
12. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER AS SHOWN AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
13. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.4 SPC. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
14. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
15. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
16. FOR PLASTIC PIPE SIZES GREATER THAN 6 INCHES, AND OTHER PIPE SIZES GREATER THAN 4 INCHES, RESTRAINTS SHALL BE PROVIDED FOR DRAINPIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING, BACKFILL AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
17. BASES OF STACKS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, VIRGIN OR COMPACTED EARTH, OR OTHER SUITABLE MATERIAL TO SUPPORT THE WEIGHT OF THE PIPING.
18. HORIZONTAL DRAINPIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.1 SPC. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
19. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
20. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3 OF THE SPC. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE SPC. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
21. INDIRECT WASTE PIPING THAT EXCEEDS 2 FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY, OR 4 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE A MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
22. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
23. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
24. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES SHALL BE MADE WATERTIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
25. INSTALL FULL OPEN VALVES PER SPC 606.1 ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL SHUTOFF VALVES PER SPC 606.2.

MATERIALS:

1. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
2. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
3. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
4. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT-HAND SIDE OF THE FIXTURE FITTING.
5. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.14 OF THE SPC AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
6. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2" SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTEWATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
7. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
8. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF 0.25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
   8.1. PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD-PARTY CERTIFIED AS CONFORMING TO NSF 14.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE SPC. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.

ABBREVIATIONS AND DEFINITIONS

ABBREVIATION	DEFINITION
CWS	COLD WATER SUPPLY
HWS	HOT WATER SUPPLY
SAN	SANITARY SEWER
GL	GREASE LADEN
VTR	VENT TO ROOF
FPHB	FREEZE PROOF HOSE BIBB
IHB	INTERIOR HOSE BIBB
PC	PLUMBING CONTRACTOR
BFP	BACK FLOW PREVENTOR
AFF	ABOVE FINISHED FLOOR
RI	ROUGH IN
CRI	CONCEALED ROUGH IN
ID	INTERIOR DRAIN-STORM
DS	DOWNSPUT-STORM
SS	SOIL STACK - SANITARY
FD	FLOOR DRAIN
RD	ROOF DRAIN
FU	FIXTURE UNIT
PT	PLASTER TRAP
PU	PROCTO UNIT
OS&Y	OUTSIDE STEAM AND YOKE
WH	WATER HEATER
OSD	OPEN-SITE DRAIN
VS	VENT STACK (SANITARY)
SV	STACK VENT (SANITARY)
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT

DO NOT TAP WATER LINE AHEAD OF RPZ.

LINETYPE LEGEND

COLD WATER SUPPLY
HOT WATER SUPPLY
SANITARY SEWER LINE
VENT LINE

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RENOVATIONS - 2025
PLUMBING GENERAL NOTES

SHEET NO.
P-001

PROJECT NO: 250132

FIXTURE TYPE	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
		EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
BATHROOM GROUP, PRIVATE, FLUSH VALVE	2	6.0	12.0	6.0	3.0	8.0	6.0	16.0
LAVATORY, PUBLIC	2	2.0	4.0	1.5	1.5	2.0	3.0	4.0
SERVICE SINK, OFFICES, ETC.	1	2.0	2.0	2.5	2.25	3.0	2.3	3.0
DEMAND FIXTURE	GPM	QTY	TOTAL GPM		TOTAL DFU		18.0	
					TOTAL WSFU		11.3	23.0
					GPM		15.6	40.2
					OTHER FIXTURES' GPM		0	0
					TOTAL GPM		15.6	40.2
MINIMUM BUILDING DRAIN SIZE	4"							
MINIMUM WATER LINE SIZE	1-1/2"							

ELECTRIC WATER HEATER SCHEDULE

MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GAL	KW	GPH @ 100°F ΔT	°F	VOLTAGE	PHASE	COLD	HOT	
WH-1	RHEEM	ELDS40	38	4.5	30	110	208	1	3/4	3/4	1-5

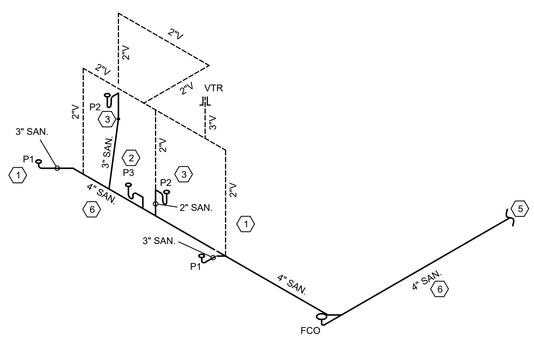
1. PROVIDE GALVANIZED STEEL SAFETY PAN
2. UL 174 LISTED
3. PROVIDE ASME LISTED TEMPERATURE AND PRESSURE RELIEF VALVE
4. MEET OR EXCEED ENERGY FACTOR REQUIREMENTS OF ASHRAE 90.1-2007
5. OR EQUAL BY A.O. SMITH, BRADFORD WHITE, OR STATE

PLUMBING FIXTURE SCHEDULE

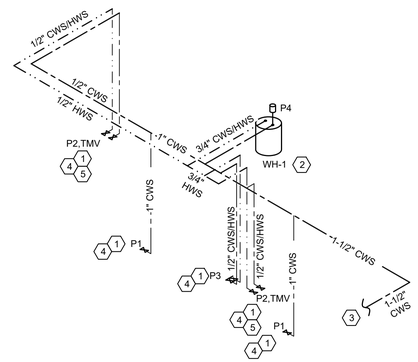
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	FLUSH VALVE WATER CLOSET	TOTO CT705EN OR EQUAL BY AMERICAN STANDARD OR KOHLER	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN ROYAL 1.28 GPF ELECTRONIC FLUSHOMETER OR EQUAL BY ZURN OR TOTO.	-	1"	3"
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112. 19. 2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE A SENSOR TYPE FAUCET SIMILAR TO INNSBROOK SELECTRONIC TOUCHLESS FAUCET, MODEL 6055.205, 0.5 GPM/1.9 LPM.	1/2"	1/2"	2"
P3	MOP SINK	FIAT MSB2424 OR EQUAL BY FLORESTONE OR STERN WILLIAMS	OUTSIDE DIMENSIONS OF 24 X24 X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE. INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL. PROVIDE 830-AA CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4 INCH HOSE THREAD ON SPOUT.	1/2"	1/2"	3"
P4	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
TMV	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-
WCO	WALL CLEANOUT	ZURN, WATTS, OR JR SMITH	CAST IRON CLEANOUT FERRULE WITH THREADED BRASS COUNTERSUNK CLEANOUT PLUG, STAINLESS STEEL ACCESS COVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	-	4"
WHA	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES OR EQUAL BY WATTS OR SIOUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS.	-	VARIES	-

SANITARY RISER HEX NOTES

1. PC TO LEAVE ALL BATHROOMS OPERABLE FROM A WATER AND WASTE SUPPLY STANDPOINT.
2. PC TO VERIFY MOPSINK IN GOOD WORKING ORDER. VERIFY ALL DRAIN LINES & WATER SUPPLY LINES, REPLACE WITH EQUAL IF NOT IN GOOD WORKING ORDER.
3. VERIFY SINK FUNCTION, HOT, COLD, & DRAIN. PC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER. VERIFY ALL DRAINS & PIPING IS IN GOOD WORKING ORDER. IF NOT IN GOOD WORKING ORDER REPLACE WITH EQUAL.
4. NOT USED
5. CONNECT TO EXISTING SEWER LINE IN BASEMENT
6. NEW PVC SANITARY LINE



1 SANITARY RISER
Scale: N/A



1 DOMESTIC SUPPLY RISER
Scale: N/A

DOMESTIC SUPPLY RISER HEX NOTES

1. PC TO INSTALL NEW PEX WATER LINES TO REPLACE EXISTING LINES. FIXTURES TO REMAIN.
2. PC TO REPLACE WATER HEATER WITH SPECIFIED MODEL OR EQUIVALENT THATS APPROVED BY ENGINEER. WATER HEATER TO BE LOCATED ABOVE CEILING WITH DRAINPAN THAT DRAINS TO MOP SINK.
3. CONNECT TO EXISTING WATER LINE IN BUILDING, ALL WATER LINES TO BE REPLACED WITH PEX PIPING.
4. REPLACE FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
5. REPLACE WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.

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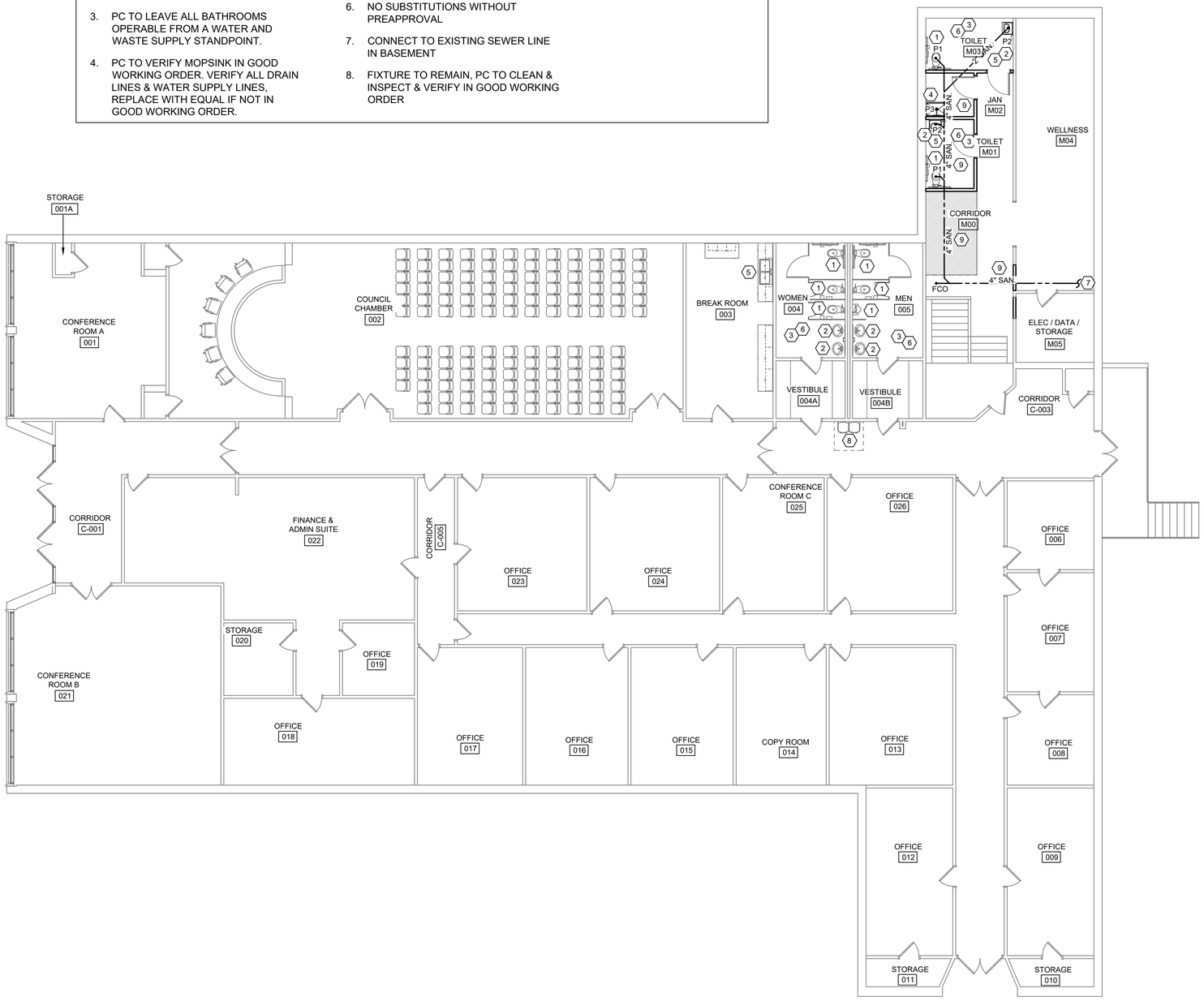
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PLUMBING SCHEDULES & RISER

SHEET NO.
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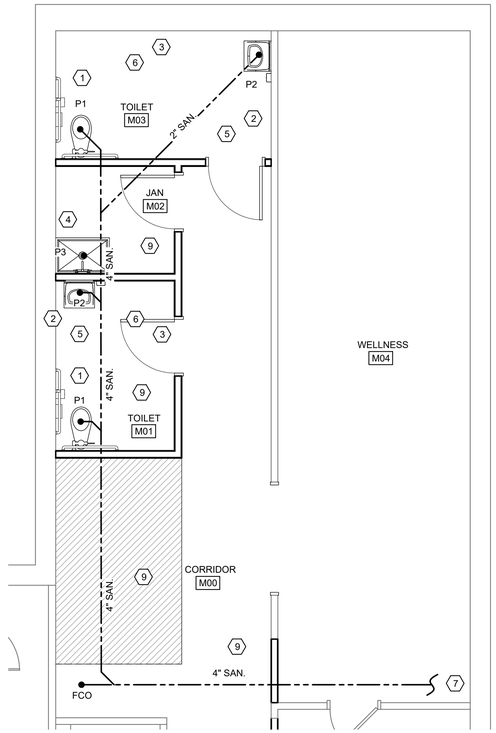
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PLUMBING PLAN HEX NOTES

1. REPLACE FAUCET WITH FAUCET FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
2. REPLACE FAUCET WITH FAUCET WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.
3. PC TO LEAVE ALL BATHROOMS OPERABLE FROM A WATER AND WASTE SUPPLY STANDPOINT.
4. PC TO VERIFY MOPSINK IN GOOD WORKING ORDER. VERIFY ALL DRAIN LINES & WATER SUPPLY LINES, REPLACE WITH EQUAL IF NOT IN GOOD WORKING ORDER.
5. VERIFY SINK FUNCTION, HOT, COLD, & DRAIN. PC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER. VERIFY ALL DRAINS & PIPING IS IN GOOD WORKING ORDER. IF NOT IN GOOD WORKING ORDER REPLACE WITH EQUAL.
6. NO SUBSTITUTIONS WITHOUT PREAPPROVAL
7. CONNECT TO EXISTING SEWER LINE IN BASEMENT
8. FIXTURE TO REMAIN, PC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER
9. NEW PVC SANITARY LINE



1 SANITARY PLAN
Scale: 1/8" = 1'-0"



2 SANITARY PLAN DETAIL
Scale: 1/4" = 1'-0"

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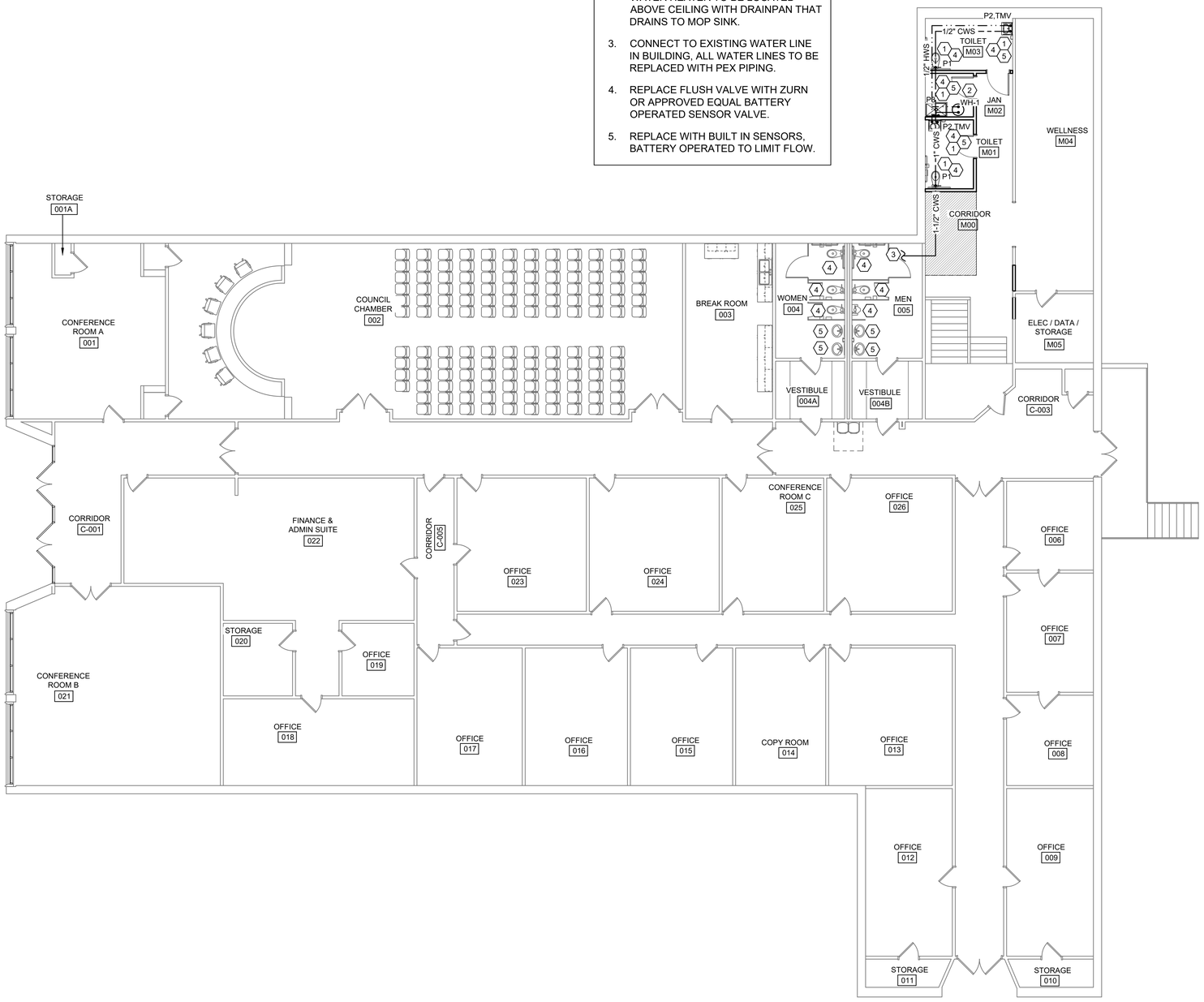
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PLUMBING PLAN VIEW

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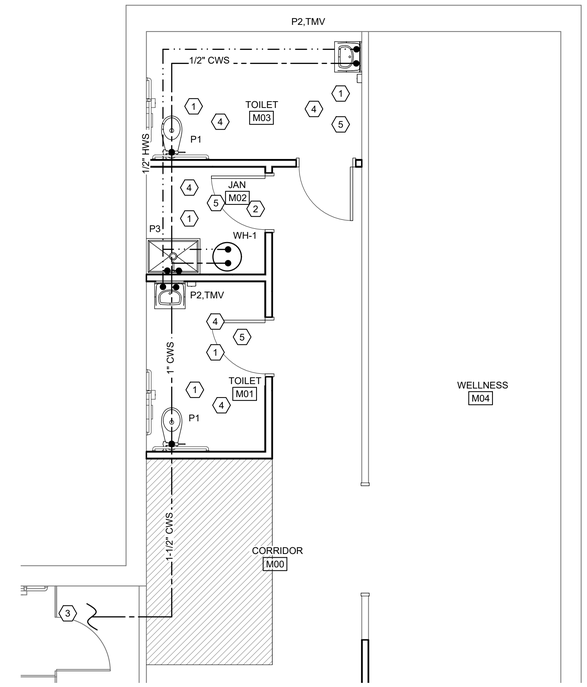
PROJECT NO: 250132

DOMESTIC SUPPLY PLAN HEX NOTES

1. PC TO INSTALL NEW PEX WATER LINES TO REPLACE EXISTING LINES. FIXTURES TO REMAIN.
2. PC TO REPLACE WATER HEATER WITH SPECIFIED MODEL OR EQUIVALENT THATS APPROVED BY ENGINEER. WATER HEATER TO BE LOCATED ABOVE CEILING WITH DRAINPAN THAT DRAINS TO MOP SINK.
3. CONNECT TO EXISTING WATER LINE IN BUILDING, ALL WATER LINES TO BE REPLACED WITH PEX PIPING.
4. REPLACE FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
5. REPLACE WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.



1 DOMESTIC SUPPLY PLAN
Scale: 1/8" = 1'-0"



2 DOMESTIC SUPPLY PLAN DETAIL
Scale: 1/4" = 1'-0"

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PLUMBING PLAN VIEW

SHEET NO.
P-103

PROJECT NO: 250132

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS:
   PC - PLUMBING CONTRACTOR,
   EC - ELECTRICAL CONTRACTOR,
   MC - MECHANICAL CONTRACTOR,
   GC - GENERAL CONTRACTOR,
   FASC - FIRE ALARM SYSTEM CONTRACTOR,
   AHJ - AUTHORITY HAVING JURISDICTION
   NECA- NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
   NEC- NATIONAL ELECTRICAL CODE
   SBC- CURRENT STATE BUILDING CODE (VIRGINIA CONSTRUCTION CODE)
   SFC- CURRENT STATE FIRE CODE (VIRGINIA STATEWIDE FIRE PREVENTION CODE)
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE EC SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE EC.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE EC AT AN APPROVED LOCATION. THE EC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE EC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE EC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE EC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE EC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE EC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. * EXCEPTION, EXISTING CIRCUITS USING RIGID METAL CONDUIT (RMC). A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH NEC 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
11. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
12. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE EC SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
13. THE EC SHALL COORDINATE WITH THE GC TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
14. ALL WORK SHALL CONFORM TO NEC, SBC, AND ALL APPLICABLE LOCAL CODES.

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
4. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
5. EC SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
6. EC SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
7. LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
8. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. *** FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH ARTICLES 300.5(G), 300.7(A), AND 300.50(F) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
9. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL-CORRUGATED, SHEET DECKING-TYPE ROOF. SEE NEC 300.4(E)
10. THE EC SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE EC. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH SBC 714.4.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
11. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE SBC.
12. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2-1/8 in DEEP BOX WITH 3/4 in KNOCK-OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
13. EC SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
14. EC SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
15. EC SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. EC SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
16. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
17. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
18. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.10(G).
19. IN ASSEMBLY AREAS EXCEEDING 100 PERSONS OCCUPANCY, WIRING METHODS SHALL COMPLY WITH NEC 518.

MATERIALS:

1. THE EC SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. EC SHALL PROVIDE ALL SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. EC SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. EC SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. EC SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE EC. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC, INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR T&B "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE EC. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O-Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

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COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
09/29/2025

KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

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REVISION

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							DESCRIPTION

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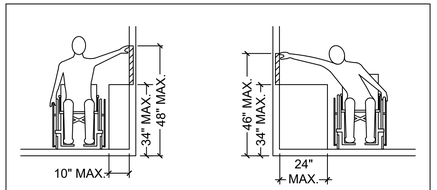
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DESCRIPTION

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SHEET:
RENOVATIONS - 2025
ELECTRICAL GENERAL NOTES

SHEET NO.
E-001

PROJECT NO: 250132



ANSI A117.1 FIG. 308.3.2 OBSTRUCTED HIGH REACH SIDE.
ALL SWITCHES AND CONTROLS MUST COMPLY FOR ALL COUNTERTOPS

ELECTRICAL DESIGNER'S STATEMENT			
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE __X___ PERFORMANCE_____ ENERGY COST BUDGET___			
LIGHTING SCHEDULE:			
LAMP TYPE REQUIRED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:		SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:		SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:		SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:		WATTS SPECIFIED	WATTS ALLOWED
		5452	8514.88

OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
OFFICE	10384	0.82	8514.88
TOTAL	10384		8514.88

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2021 VIRGINIA ENERGY CONSERVATION CODE.

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2021 VIRGINIA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.

5452W SPECIFIED <= 7663.392W 8514.88W ALLOWED X 90%

RECEPTACLE NOTES

$\Phi_{X,...}$

X- RECEPTACLE NOTE
- A- ARC FAULT CIRCUIT INTERRUPTER (AFCI)
- AB- AFCI BREAKER
- G- GROUND FAULT CIRCUIT INTERUPTER (GFCI), PERSONAL PROTECTION.
- GB- GFCI BREAKER FOR MAINTENANCE APPLIANCES
- GF- GROUND FAULT PROTECTION OF EQUIPMENT (GFPE) BREAKER
- WP- WEATHERPROOF RECEPTACLE WITH "NRTL" LISTED COVERPLATE FOR WET LOCATION WITH PLUG INSTALLED. MTD. 48" AFF UNLESS OTHERWISE INDICATED
- T- TAMPER RESISTANT SAFETY RECEPTACLE

Φ_{+Y}

Y- MOUNTING NOTE - WALL MOUNTED DEVICE, AT 18" ABOVE FINISHED FLOOR (A.F.F), U.O.I
- C- MOUNTED 6" ABOVE COUNTER OR 42" A.F.F. COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS.

+XX"- DIMENSIONED HEIGHT

POWER CIRCUIT DESIGNATIONS

A - #
PANEL DESIGNATION
CIRCUIT DESIGNATION

LIGHTING CIRCUIT DESIGNATIONS

A | A#-# | C
LIGHT FIXTURE
PANEL DESIGNATION
CIRCUIT DESIGNATION
CONTROL DESIGNATION

* LOWER CASE LETTER INDICATES SWITCH ID
- NL - NIGHT LIGHT - 24/7 OPERATION
- P - PHOTOCELL
- D - DIMMER
- A# - OCCUPANCY SENSOR CIRCUIT (E.G. RMJ-B1)
- T - TIMER/TIME CLOCK
- $ - TOGGLE SWITCH

NOTES FOR EMERGENCY FIXTURES

1. FOR INTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE FIXTURE BALLAST AHEAD OF ALL SWITCHES, SENSORS, ETC.
2. FOR EXTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE NORMAL EXTERIOR LIGHTS OR AS SHOWN ON PLANS AHEAD OF ALL CONTACTORS, PHOTOCELLS, ETC.
3. IN BOTH CASES, EMERGENCY POWER SHOULD INITIATE ONLY IN THE EVENT OF THE LOSS OF NORMAL POWER. ALL BATTERIES SHALL BE RATED TO POWER EMERGENCY ILLUMINATION FOR 90 MINUTES MINIMUM.

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ELECTRICAL NOTES & LEGENDS CONT

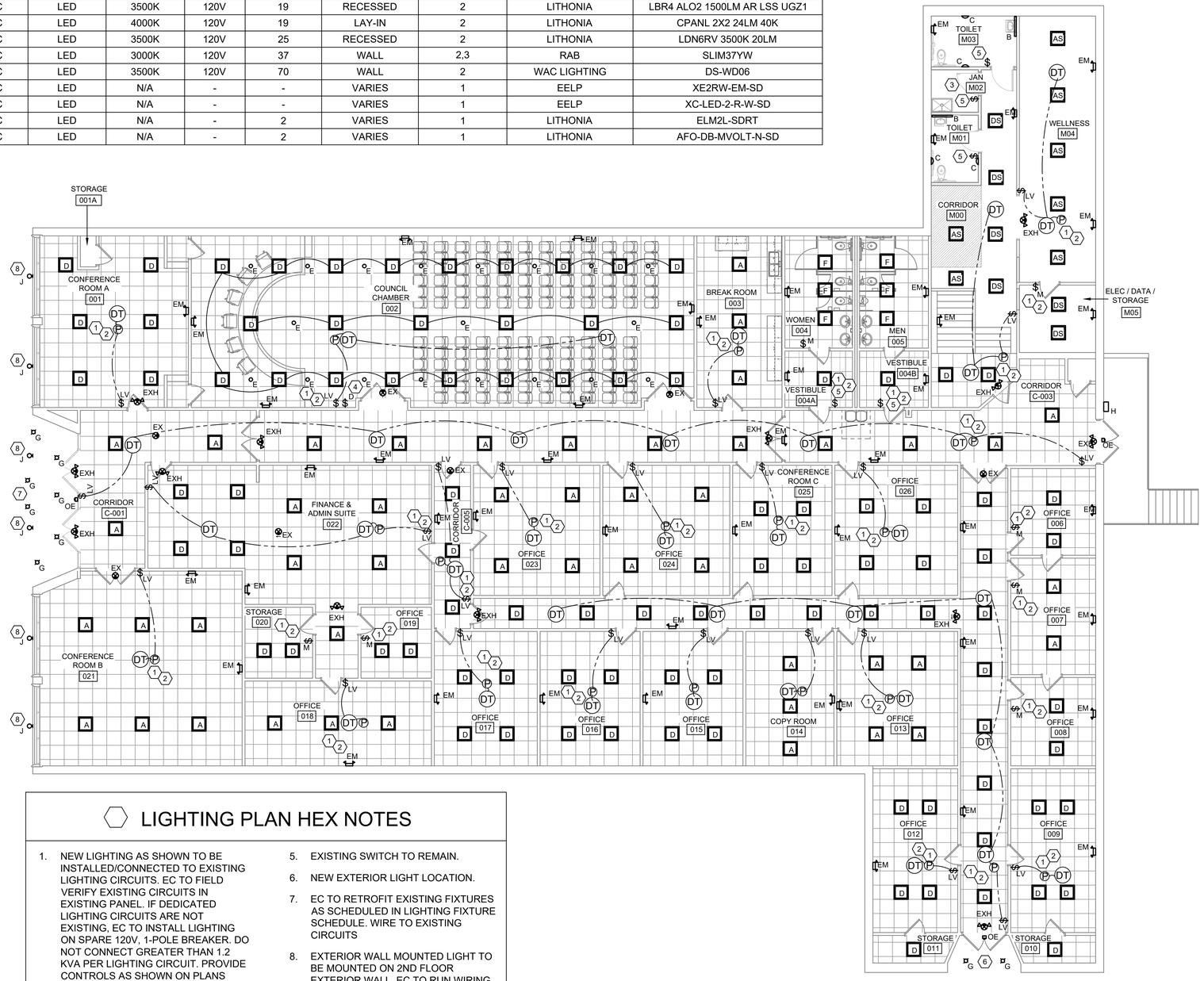
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E-002

PROJECT NO: 250132

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	LOUVER/LENS	LAMPS		VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	CCT						
A	2X2' LAY-IN LED FLAT PANEL	ACRYLIC	LED	4000K	120V	39	LAY-IN	2	LITHONIA	CPANL 2X2 44LM 40K
AS	2X2' SURFACE LED FLAT PANEL	ACRYLIC	LED	4000K	120V	39	SURFACE	2	LITHONIA	CPANL 2X2 44LM 40K
B	LED BAR LIGHT	ACRYLIC	LED	4000K	120V	13	SURFACE	2	LITHONIA	CSS L24 ALO15 MVOLT SWW3 80CRI
C	LED WALL SCONCE	ACRYLIC	LED	4000K	120V	16	SURFACE	2	MARK ARCHITECTURAL	MGLSW 12IN 80CRI 40K 1300LM
D	2X2' LAY-IN LED FLAT PANEL	ACRYLIC	LED	4000K	120V	27	LAY-IN	2	LITHONIA	CPANL 2X2 33LM 40K
DS	2X2' SURFACE LED FLAT PANEL	ACRYLIC	LED	4000K	120V	27	SURFACE	2	LITHONIA	CPANL 2X2 33LM 40K
E	4" LED DOWNLIGHT	ACRYLIC	LED	3500K	120V	19	RECESSED	2	LITHONIA	LBR4 ALO2 1500LM AR LSS UGZ1
F	2X2' LAY-IN LED FLAT PANEL	ACRYLIC	LED	4000K	120V	19	LAY-IN	2	LITHONIA	CPANL 2X2 24LM 40K
G	6" LED RETROFIT DOWNLIGHT	ACRYLIC	LED	3500K	120V	25	RECESSED	2	LITHONIA	LDN6RV 3500K 20LM
H	EXTERIOR WALLPACK	ACRYLIC	LED	3000K	120V	37	WALL	2,3	RAB	SLIM37YW
J	EXTERIOR UP/DOWN WALL LIGHT	ACRYLIC	LED	3500K	120V	70	WALL	2	WAC LIGHTING	DS-WD06
EX	LED EXIT SIGN	ACRYLIC	LED	N/A	-	-	VARIES	1	EELP	XE2RW-EM-SD
EXH	LED EXIT/EMERGENCY COMBO	ACRYLIC	LED	N/A	-	-	VARIES	1	EELP	XC-LED-2-R-W-SD
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	-	2	VARIES	1	LITHONIA	ELM2L-SDRT
OE	EXTERIOR LIGHT	ACRYLIC	LED	N/A	-	2	VARIES	1	LITHONIA	AFO-DB-MVOLT-N-SD

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, MOBERN, OR CURRENT BY GE LIGHTING.
3. NO SUBSTITUTIONS WITHOUT PREAPPROVAL BY ENGINEER.



1 LIGHTING PLAN

Scale: 1/8" = 1'-0"

GENERAL NOTES

1. ALL EXISTING LIVE VOLTAGE SWITCHES TO BE REPLACED WITH NEWLY SPECIFIED SWITCHES UNLESS NOTED OTHERWISE.
2. ALL EXTERIOR LIGHTING TO BE CONTROLLED VIA PHOTOCELL.
3. ALL EMERGENCY LIGHTING TO BE POWERED THROUGH ROOM LIGHTING CIRCUIT, AHEAD OF ALL LIGHTING CONTROLS.

LIGHTING PLAN HEX NOTES

1. NEW LIGHTING AS SHOWN TO BE INSTALLED/CONNECTED TO EXISTING LIGHTING CIRCUITS. EC TO FIELD VERIFY EXISTING CIRCUITS IN EXISTING PANEL. IF DEDICATED LIGHTING CIRCUITS ARE NOT EXISTING, EC TO INSTALL LIGHTING ON SPARE 120V, 1-POLE BREAKER. DO NOT CONNECT GREATER THAN 1.2 KVA PER LIGHTING CIRCUIT. PROVIDE CONTROLS AS SHOWN ON PLANS
2. EC TO VERIFY LOCATIONS OF EXISTING SPRINKLER HEADS AND AVOID INTERFERENCE WITH NEW LIGHTING PLAN.
3. REUSE EXISTING FIXTURE. RE-LAMP WITH LED.
4. DIMMER SWITCH TO 0% FOR LIGHT FIXTURES LABELED "E" ONLY.
5. EXISTING SWITCH TO REMAIN.
6. NEW EXTERIOR LIGHT LOCATION.
7. EC TO RETROFIT EXISTING FIXTURES AS SCHEDULED IN LIGHTING FIXTURE SCHEDULE. WIRE TO EXISTING CIRCUITS
8. EXTERIOR WALL MOUNTED LIGHT TO BE MOUNTED ON 2ND FLOOR EXTERIOR WALL. EC TO RUN WIRING TO J-BOX IN EXTERIOR WALL. EC TO VERIFY WITH OWNER FOR EXACT LOCATION OF FIXTURE AND FIXTURE SPEC PRIOR TO INSTALLATION. WIRE INTO NEAREST AVAILABLE EXTERIOR LIGHTING CIRCUIT.

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COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
09/29/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

DESCRIPTION

SOUTH HILL TOWN OFFICE

211 S MECKLENBURG AVE
SOUTH HILL VA, 23970

REVISION

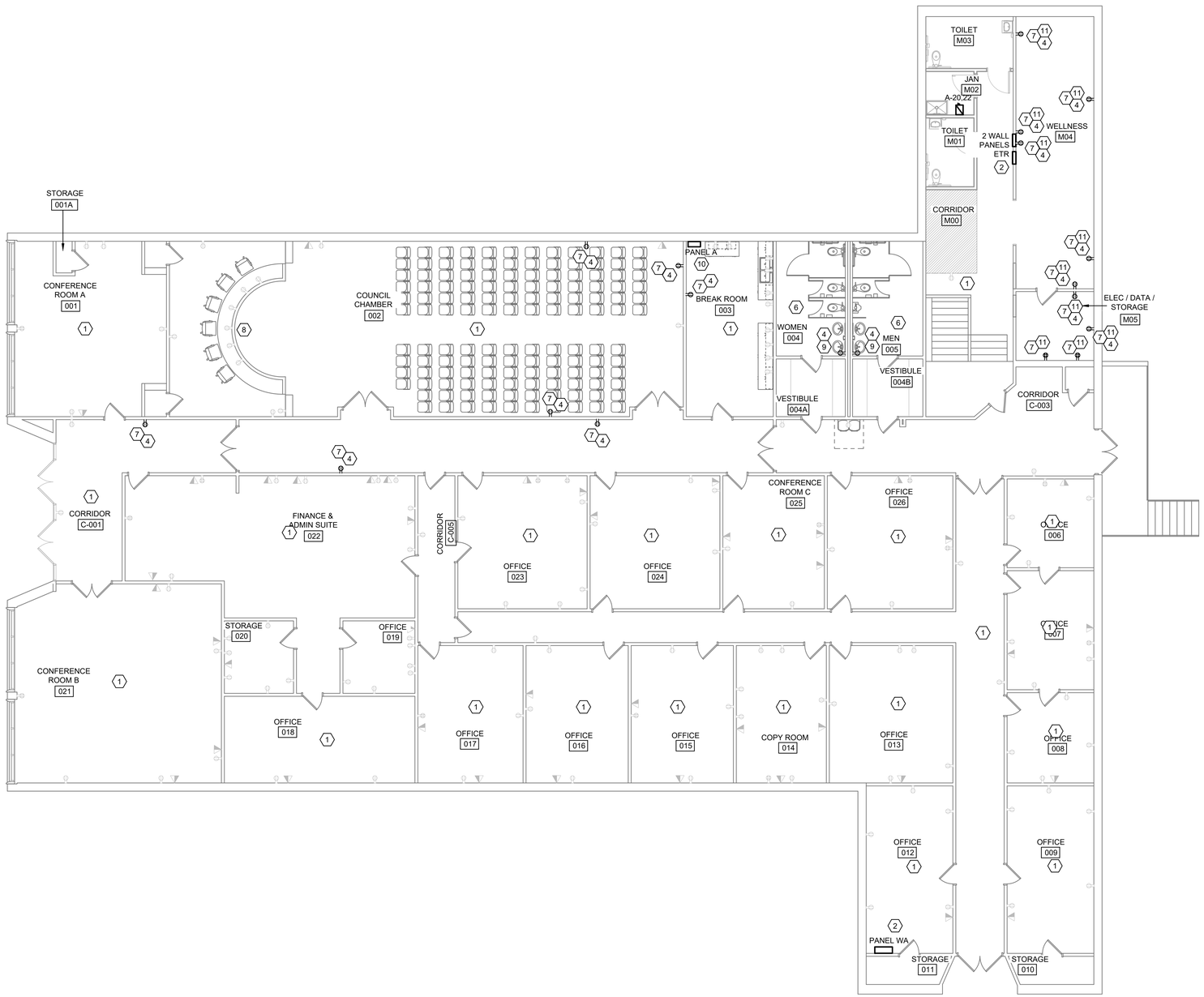
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SHEET:	RENOVATIONS - 2025 LIGHTING PLAN & SCHEDULE
SHEET NO.	E-101
PROJECT NO:	250132

POWER/RECEPTACLE PLAN HEX NOTES

1. RECEPTACLES & DATA PORTS EXISTING TO REMAIN. EC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER. REPLACE W/ EQUAL IF NOT IN GOOD WORKING ORDER.
2. ELECTRICAL PANELS EXISTING TO REMAIN. EC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER. REPLACE W/ EQUAL IF NOT IN GOOD WORKING ORDER.
3. NOT USED
4. ALL OUTLETS TO BE DUPLEX, COMMERCIAL GRADE
5. NOT USED
6. EC TO ALSO RECONNECT EXISTING CIRCUITS FOR RESTROOMS.
7. NEW RECEPTACLE TO BE ADDED TO SPECIFIED SPACE.
8. FOUR OF THE RECEPTACLES ARE ABOVE THE COUNTER. THREE OF THE RECEPTACLES ARE BELOW THE COUNTER . ALL EXISTING TO REMAIN
9. COUNTER HEIGHT GFCI RECEPTACLE.
10. NEW ELECTRICAL PANEL TO ADD. SOURCE PANEL LOCATED ON ROOF
11. NEW WALL RECEPTACLES REMAIN AT A 12' INTERVAL.

GENERAL NOTES

1. CONNECT ALL TO EXISTING PANELS. EC TO DOCUMENT CIRCUITS IN PANELS. LABEL RECEPTACLES, PANELS, AND CIRCUITS
2. ALL COVERS TO BE OVERSIZE STAINLESS STEEL. COVER PLATES FOR OUTLETS AND SWITCHES.



1 POWER PLAN

Scale: 1/8" = 1'-0"

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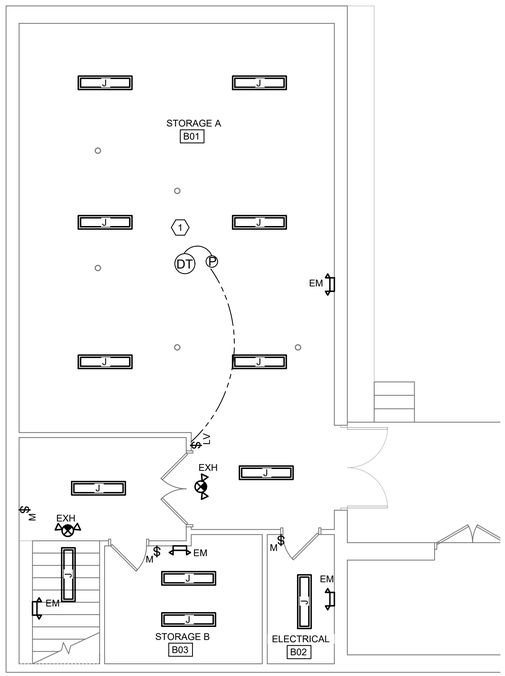
SHEET:
RENOVATIONS 2025

SHEET NO.
E-102

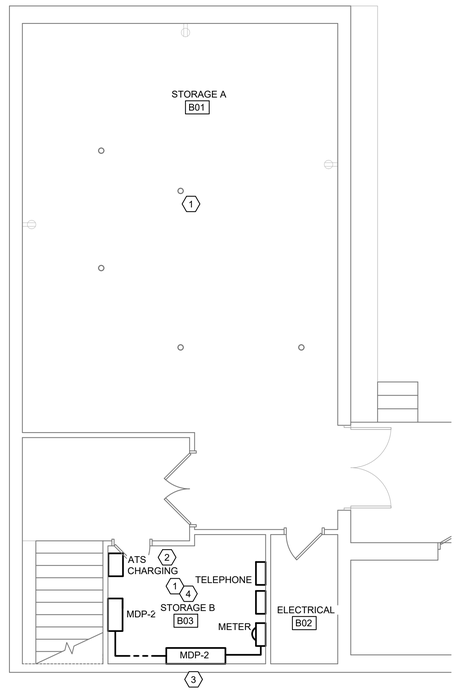
PROJECT NO: 250132

LIGHTING PLAN HEX NOTES

1. MARK J FIXTURE SHALL BE LED PENDANT, SUPPORT FROM STRUCTURE.



1 BASEMENT LIGHTING PLAN
Scale: 3/16" = 1'-0"



1 BASEMENT POWER PLAN
Scale: 3/16" = 1'-0"

POWER PLAN HEX NOTES

1. ALL RECEPTACLES ARE EXISTING TO REMAIN.
2. ATS CHARGING IS OBSOLETE,DEMO BACK TO SOURCE
3. INCOMING UNDERGROUND 208Y/120 3 PHASE ELECTRIC SERVICE FROM UTILITY.
4. EC TO VERIFY SERVICE RECEPTACLES ARE EXISTING AND ARE CLEAN AND IN GOOD WORKING ORDER. IF NOT EC TO ADD GFCI SERVICE RECEPTACLE WHERE REQUIRED AND CIRCUIT INTO NEAREST ROOM CIRCUIT

POWER DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET. EC TO INSTALL 3/4"C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
	DEDICATED RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1 UNLESS OTHERWISE NOTED ON PLANS. VERIFY PLUG TYPE PRIOR TO PURCHASE & INSTALLATION. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596. MAY BE EITHER SIMPLEX, DUPLEX, OR QUAD.
	240V RECEPTACLE	240V RECEPTACLE WITH SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE. VERIFY NEMA PLUG CONFIGURATION.
	QUAD FLOOR RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.

LIGHTING DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$D	DIMMER SWITCH	COMMERCIAL GRADE, 120V, 1500W
$M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DSW-301-W LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSTOPPER LVSW-101-B LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
DT	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
P	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
J	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

VOLTAGE DROP SCHEDULE

120V CIRCUITS < 8 AMPS (1.0 kVA)

DISTANCE TO 1ST LOAD	AWG SIZE
0' - 120'	#12
121' - 190'	#10
191' - 300'	#8
301' - 470'	#6

120V CIRCUITS 9 TO 14 AMPS (1.0-1.7 kVA)

DISTANCE TO 1ST LOAD	AWG SIZE
0' - 65'	#12
66' - 110'	#10
111' - 170'	#8
171' - 270'	#6

WIRE SIZES INDICATED IN BREAKER FEEDER SCHEDULE ARE MINIMUM WIRE SIZES. CONTRACTOR SHALL UPSIZE WIRES BASED ON LOAD AND LENGTH OF RUN AS INDICATED IN SCHEDULE ABOVE.

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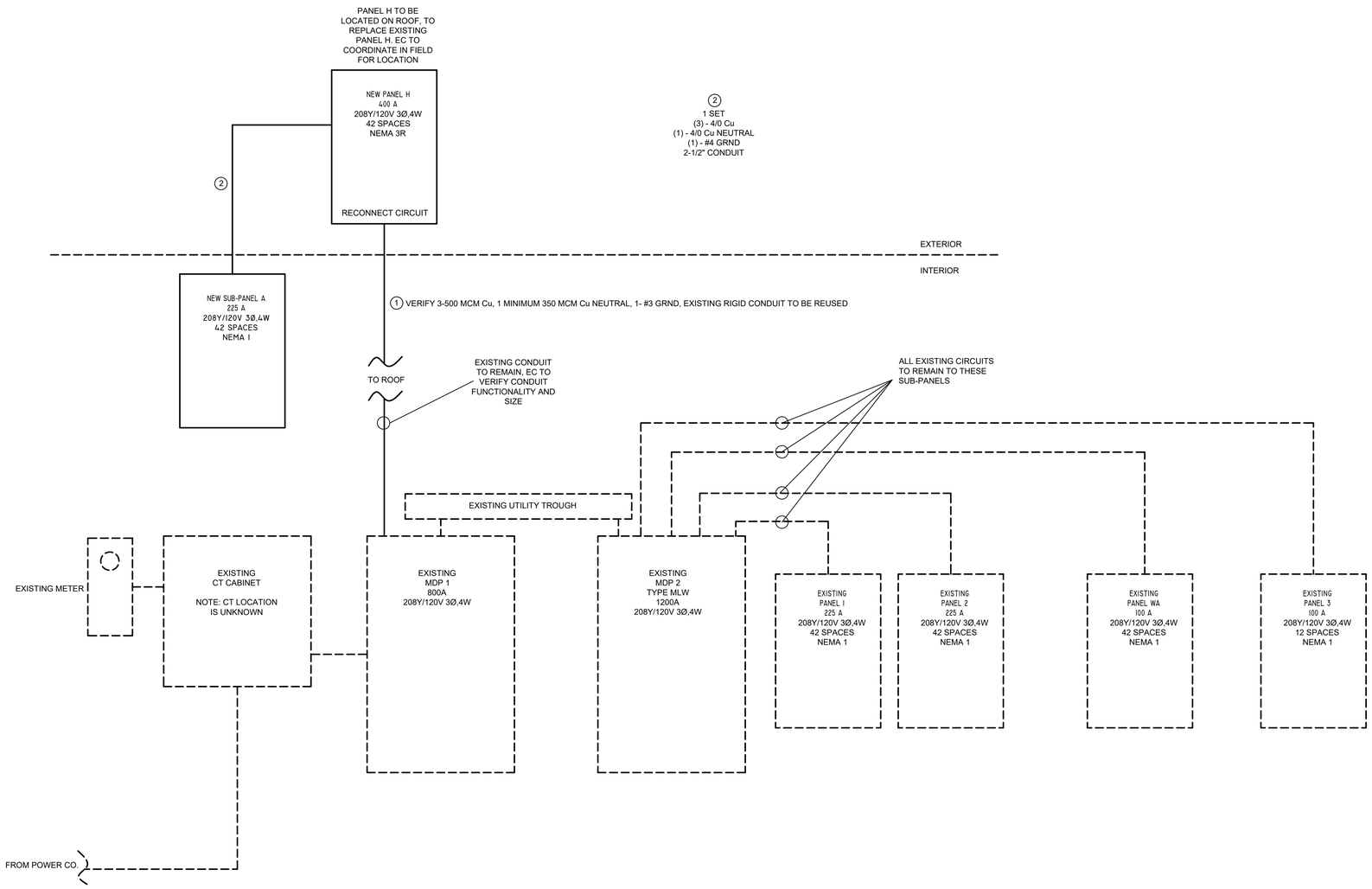
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SHEET:
RENOVATIONS 2025
BASEMENT PLANS & SCHEDULES

SHEET NO.
E-103

PROJECT NO: 250132



EC TO TRACE AND VERIFY CIRCUITS BEFORE MODIFICATION

EC TO RE-LABEL ALL PANELS

BREAKER FEEDER SCHEDULE

AMPS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
15A	#12	#12	1/2"
20A	#12	#12	1/2"
25A	#10	#10	3/4"
30A	#10	#10	3/4"
35A	#8	#10	1"
40A	#8	#10	1"
50A	#8	#10	1"
60A	#6	#10	1 1/4"
70A	#4	#8	1 1/4"
80A	#4	#8	1 1/4"
90A	#3	#8	1 1/2"
100A	#3	#8	1 1/2"
110A	#2	#6	2"
125A	#1	#6	2"
150A	1/0	#6	2 1/2"
175A	2/0	#6	2 1/2"
200A	3/0	#6	2 1/2"
225A	4/0	#4	2 1/2"
250A	250 MCM	#4	3"
300A	350 MCM	#4	3 1/2"
350A	500 MCM	#3	4"
400A	2 SETS- 3/0	#3	2 1/2"
500A	2 SETS- 250 MCM	#2	3"
600A	2 SETS- 350 MCM	#1	3 1/2"
700A	3 SETS- 250 MCM	1/0	3"
800A	3 SETS- 300 MCM	1/0	3 1/2"
1000A	3 SETS- 400 MCM	2/0	3 1/2"

1. CONDUCTOR PER POLE PLUS NEUTRAL PER SET. E.C. TO VERIFY NECESSITY OF NEUTRAL FOR EACH CIRCUIT. NEUTRAL MAY BE DELETED IF NOT REQUIRED FOR INDIVIDUAL PIECES.

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SHEET:
RENOVATIONS 2025
CONDUCTOR SIZE TABLE

SHEET NO.
E-104

PROJECT NO: 250132

PANEL A

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	AHU-1	30/2	2.50	A	0.00	20/1	SPARE	2
3			2.50	B	2.50	30/2	AHU-2	4
5	AHU-3	30/2	2.50	C	2.50			6
7			2.50	A	2.50	30/2	AHU-4	8
9	AHU-5	30/2	2.50	B	2.50			10
11			2.50	C	4.99	60/2	AHU-6	12
13	AHU-7	60/2	4.99	A	4.99			14
15			4.99	B	4.99	60/2	AHU-8	16
17	AHU-9	60/2	4.99	C	4.99			18
19			4.99	A	2.82	30/2	WH-1	20
21	SPARE	20/1	0.00	B	2.82			22
23	SPARE	20/1	0.00	C	0.00	--	SPACE	24
25	SPACE	--	0.00	A	0.00	--	SPACE	26
27	SPACE	--	0.00	B	0.00	--	SPACE	28
29	SPACE	--	0.00	C	0.00	--	SPACE	30
31	SPACE	--	0.00	A	0.00	--	SPACE	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS			
			A	25.29	210.75			
			B	22.80	190			
			C	22.47	187.25			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	225A
MAIN CIRCUIT BREAKER RATING	225A MB
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA1
MOUNTING	RECESSED

EXISTING PANEL 2 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	COUNTER REC.	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	6
7	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	10
11	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	12
13	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	14
15	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	16
17	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	OUTSIDE LIGHTS	18
19	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	20
21	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	22
23	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	24
25	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	26
27	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	28
29	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	30
31	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	UPSTAIRS LIGHTS	32
33	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	34
35	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	FAN	36
37	EXISTING BREAKER	20/1	0.00	A	0.00	20/2	HOT WATER	38
39	EXISTING BREAKER	20/1	0.00	B	0.00			40
41	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	42
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	225A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

EXISTING MDP1

CKT	LOAD	BKR	LOAD kVA	PH
1	EXISTING BREAKER	600/3	0.00	A
2			0.00	B
3			0.00	C
4	MDP#2 TOP	700/3	0.00	A
5			0.00	B
6			0.00	C
7*	PANEL H	400/3	42.76	A
8*			43.18	B
9*			42.02	C
10	SPACE	--	0.00	A
11			0.00	B
12			0.00	C
13	SPACE	--	0.00	A
14			0.00	B
15			0.00	C
16	SPACE	--	0.00	A
17			0.00	B
18			0.00	C

PH	kVA	AMPS
A	42.76	356.33
B	43.18	359.83
C	42.02	350.17

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	800A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K - EC TO VERIFY
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

*NEW BREAKER REPLACING OLD BREAKER OF THE SAME SIZE, EC TO VERIFY ALL EXISTING LINES PRIOR TO MODIFICATION

PANEL H

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	2 TON HP	25/2	2.08	A	2.08	25/2	2 TON HP	2
3			2.08	B	2.08			4
5	2 TON HP	25/2	2.08	C	2.08	25/2	2 TON HP	6
7			2.08	A	2.08			8
9	2 TON HP	25/2	2.08	B	4.16	50/2	4 TON HP	10
11			2.08	C	4.16			12
13	SPARE	20/1	0.00	A	0.00	20/1	SPARE	14
15	5 TON HP	60/2	4.99	B	0.00	20/1	SPARE	16
17			4.99	C	22.47	225/3	PANEL A	18
19	5 TON HP	60/2	4.99	A	25.29			20
21			4.99	B	22.80			22
23	SPARE	20/1	0.00	C	4.16	50/2	4 TON HP	24
25	SPARE	20/1	0.00	A	4.16			26
27	SPACE	--	0.00	B	0.00	--	SPACE	28
29	SPACE	--	0.00	C	0.00	--	SPACE	30
31	SPACE	--	0.00	A	0.00	--	SPACE	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS			
			A	42.76	356.33			
			B	43.18	359.83			
			C	42.02	350.17			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	400A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 3R
MOUNTING	SURFACE

EXISTING PANEL WA (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	WINDOW SPOT	20/1	0.00	A	0.00	20/1	WINDOW SPOT LIGHTS	2
3	WINDOW RECEPT	20/1	0.00	B	0.00	20/1	WINDOW SPOT LIGHTS	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	WINDOW SPOT LIGHTS	6
7	WINDOW LIGHT	20/1	0.00	A	0.00	20/1	SPARE	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	WINDOW SPOT	10
11	WINDOW SPOT	20/1	0.00	C	0.00	20/1	SPARE	12
13	SPACE	--	0.00	A	0.00	--	SPACE	14
15	SPACE	--	0.00	B	0.00	--	SPACE	16
17	SPACE	--	0.00	C	0.00	--	SPACE	18
19	SPACE	--	0.00	A	0.00	--	SPACE	20
21	CONTACTOR	40/3	0.00	B	0.00	20/1	EXHAUST FAN	22
23			0.00	C	0.00	20/1	SUPPLY FAN HEAT	24
25			0.00	A	0.00	20/1	EXISTING BREAKER	26
27	SIDE DOOR HEATER	40/3	0.00	B	0.00	20/1	EXISTING BREAKER	28
29			0.00	C	0.00	20/1	EXISTING BREAKER	30
31			0.00	A	0.00	20/1	EXISTING BREAKER	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS	--	SPACE	
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	100A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

EXISTING PANEL 3 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	ELECTRONICS/ STORE SYSTEM	6
7	SPACE	--	0.00	A	0.00	--	SPACE	8
9	SPACE	--	0.00	B	0.00	--	SPACE	10
11	SPACE	--	0.00	C	0.00	--	SPACE	12
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	100A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

NEC ELECTRIC DEMAND SUMMARY 208Y/120V, 3P, 4W

EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	kVA C	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	100%	4.50	4.50	4.50	13.50	220.12	10384 SF X 1.3 VA/SF
RECEPTACLES < 10 kVA	100%	1.02	1.02	1.02	3.06	220.44	
WATER HEATER	125%	2.82	2.82	0.00	5.64	422.13	STORAGE TANK < 120 GAL @ 125%
HVAC	100%	39.94	40.36	42.02	122.32	--	BASED ON MCA
EXISTING LOAD	125%	72.10	72.10	72.10	216.30	220.87	
DEMAND kVA PER PHASE		120.38	120.80	119.64			
DEMAND AMPS PER PHASE		1002.77	1006.26	996.60			

NOTE: ADDED RECEPTACLE LOAD SHOWN ONLY

*THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

EXISTING PANEL 1 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	COUNCIL ROOM LIGHT	6
7	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	RESTROOM	10
11	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	12
13	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	14
15	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	16
17	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	18
19	EXISTING BREAKER	20/2	0.00	A	0.00	20/1	COURT OFFICE	20
21			0.00	B	0.00	20/1	EXISTING BREAKER	22
23	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	24
25	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	26
27	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	28
29	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	KITCHEN PUMP	30
31	TELEPHONE	20/1	0.00	A	0.00	20/1	COUNTER RECEPT.	32
33	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	34
35	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	36
37	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	38
39	EXISTING BREAKER	20/2	0.00	B	0.00	20/1	COUNTER RECEPT.	40
41			0.00	C	0.00	20/1	EXISTING BREAKER	42
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	225A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

EXISTING MDP2 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	200/3	0.00	A	0.00	150/3	EXISTING BREAKER	2
3			0.00	B	0.00			4
5			0.00	C	0.00			6
7	EXISTING BREAKER	150/3	0.00	A	0.00	--	SPACE	8
9			0.00	B	0.00			10
11			0.00	C	0.00			12
13	EXISTING BREAKER	100/3	0.00	A	0.00	100/3	EXISTING BREAKER	14
15			0.00	B	0.00			16
17			0.00	C	0.00			18
19	SPACE	--	0.00	A	0.00	--	SPACE	20
21			0.00	B	0.00			22
23			0.00	C	0.00			24
25	SPACE	--	0.00	A	0.00	--	SPACE	26
27			0.00	B	0.00			28
29			0.00	C	0.00			30
31	EXISTING BREAKER	__/3	0.00	A	0.00	60/3	EXISTING BREAKER	32
33			0.00	B	0.00			34
35			0.00	C	0.00			36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39			0.00	B	0.00			40
41			0.00	C	0.00			42
43	SPACE	--	0.00	A	0.00	--	SPACE	44
45			0.00	B	0.00			46
47			0.00	C	0.00			48
49	EXISTING BREAKER	40/3	0.00	A	0.00	__/3	EXISTING BREAKER	50
51			0.00	B	0.00			52
53			0.00	C	0.00			54
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	1200A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K - EC TO VERIFY
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

EC TO TRACE AND VERIFY CIRCUITS BEFORE MODIFICATION

EC TO RE-LABEL ALL PANELS, NO HAND WRITTEN LABELS

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COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
09/29/2025
KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

DESCRIPTION
SOUTH HILL TOWN OFFICE
211 S MECKLENBURG AVE
SOUTH HILL VA. 23970

REVISION
7 6 5 4 3 2 1 DESCRIPTION DATE

ISSUED: 09/29/2025
FOR PERMITTING
DESCRIPTION

DRAWN BY: TD
CHECKED BY: REW

SHEET:
RENOVATIONS 2025
PANEL SCHEDULES

SHEET NO.
E-105

PROJECT NO: 250132

GENERAL:

Planholders are requested to insert this Addendum in the front of their Project Manual. Inform all concerned that the Bidding Documents are modified by this Addendum.

The following modifications and clarifications are hereby made a part of the Bidding Documents and supersede or otherwise modify the provisions of the published *Project Manual* and *Drawings*, dated September 29, 2025.

Refer to the Drawings, Specification Sections, or other Documents, if any, attached to this Addendum, which are hereby made a part of this Addendum.

CLARIFICATIONS TO THE PROJECT:

The opening of bids is being moved to Monday, February 9, 2026 at 10:00 AM at 111 E. Danville Street, South Hill, VA 23970.

MODIFICATIONS TO THE PROJECT MANUAL AND DRAWINGS:

DELETE the previously issued Documents indicated below in their entirety and SUBSTITUTE the revised Documents, noted as Addendum 1 dated January 6, 2026.

INVITATION TO BID

DRAWING P-101
DRAWING P-102
DRAWING P-103
DRAWING E-102
DRAWING E-103
DRAWING E-104
DRAWING E-105

REFER TO DRAWINGS ATTACHED TO THE END OF THIS ADDENDUM

END OF ADDENDUM NO 01

INVITATION TO BID

Bid Request No. 2025-12

Sealed bids for construction of the **Town Hall Renovations**, will be received in person, via regular mail by U.S. Postal Service, or via special courier service at **111 E. Danville Street, South Hill, VA 23970**, until but no later than **10:00:00 a.m.**, local prevailing time, ~~**January 12, 2026**~~, **February 9, 2026 (Addendum 1)** and then publicly opened and read immediately thereafter.

Bids received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. Bidders are responsible for ensuring their Bid is received before the deadline indicated. Bids submitted by telephone, text message, email, or facsimile shall not be accepted.

The Work generally consists of some light demolition and replacing interior finishes like for like including ceilings, floor finishes, wall base, new paint, mechanical, electrical, and plumbing.

A **non-mandatory** pre-bid conference will be held at **10:00 a.m.**, on **December 11, 2025**, at **211 S. Mecklenburg Ave., South Hill, VA 23970**. Pre-bid questions will not be answered at the pre-bid conference; submit questions via the process below.

Responses to any questions/ clarification will be in the form of addenda if required. Questions/clarifications shall be placed by **5:00 p.m. EST** on **December 19, 2025**. Submit questions to kreekes@southhillva.org. Responses will be in the form of addenda if required.

Bidders may obtain Bidding Documents electronically by visiting e-VA or the Town of South Hill website.

Refer to the Instructions to Bidders for bidding procedures and requirements.

Any questions relating to the Bidding Documents shall be directed to **Keli Reekes**, Town Manager, Town of South Hill at kreekes@southhillva.org or (434) 447-3191.

The Town of South Hill does not discriminate against faith-based organizations.

END OF INVITATION TO BID

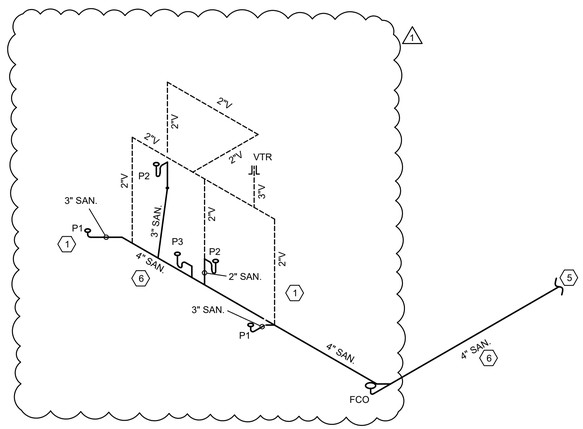
FIXTURE TYPE	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
		EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
BATHROOM GROUP, PRIVATE, FLUSH VALVE	2	6.0	12.0	6.0	3.0	8.0	6.0	16.0
LAVATORY, PUBLIC	2	2.0	4.0	1.5	1.5	2.0	3.0	4.0
SERVICE SINK, OFFICES, ETC.	1	2.0	2.0	2.5	2.25	3.0	2.3	3.0
DEMAND FIXTURE	GPM	QTY	TOTAL GPM		TOTAL DFU		18.0	
					TOTAL WSFU		11.3	23.0
					GPM		15.6	40.2
					OTHER FIXTURES' GPM		0	0
					TOTAL GPM		15.6	40.2
MINIMUM BUILDING DRAIN SIZE	4"							
MINIMUM WATER LINE SIZE	1-1/2"							

PLUMBING FIXTURE SCHEDULE

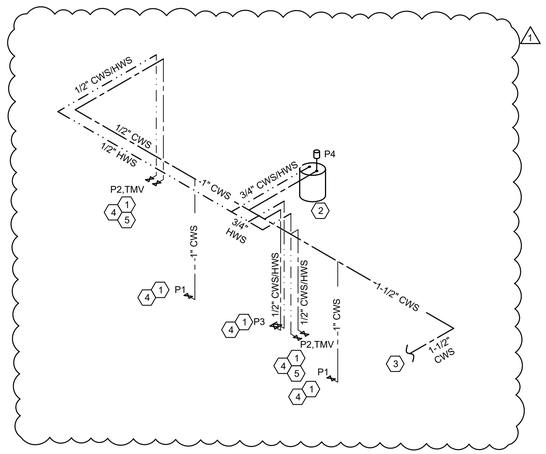
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	FLUSH VALVE WATER CLOSET	TOTO CT705EN OR EQUAL BY AMERICAN STANDARD OR KOHLER	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112. 19. 2. TOILET SHALL BE ELONGATED FONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN ROYAL 1.28 GPF ELECTRONIC FLUSHOMETER OR EQUAL BY ZURN OR TOTO.	-	1"	3"
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112. 19. 2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE A SENSOR TYPE FAUCET SIMILAR TO INNSBROOK SELECTRONIC TOUCHLESS FAUCET, MODEL 6055.205, 0.5 GPM/1.9 LPM.	1/2"	1/2"	2"
P3	MOP SINK	FIAT MSB2424 OR EQUAL BY FLORESTONE OR STERN WILLIAMS	OUTSIDE DIMENSIONS OF 24 X24 X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE. INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL. PROVIDE 830-AA CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4 INCH HOSE THREAD ON SPOUT.	1/2"	1/2"	3"
P4	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
TMV	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-
WCO	WALL CLEANOUT	ZURN, WATTS, OR JR SMITH	CAST IRON CLEANOUT FERRULE WITH THREADED BRASS COUNTERSUNK CLEANOUT PLUG, STAINLESS STEEL ACCESS COVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	-	4"
WHA	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES OR EQUAL BY WATTS OR SIOUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS.	-	VARIES	-

SANITARY RISER HEX NOTES

1. PC TO LEAVE ALL BATHROOMS OPERABLE FROM A WATER AND WASTE SUPPLY STANDPOINT.
2. NOT USED
3. NOT USED
4. NOT USED
5. CONNECT TO EXISTING SEWER LINE IN BASEMENT
6. NEW PVC SANITARY LINE



1 SANITARY RISER
Scale: N/A



1 DOMESTIC SUPPLY RISER
Scale: N/A

DOMESTIC SUPPLY RISER HEX NOTES

1. PC TO INSTALL NEW PEX WATER LINES TO REPLACE EXISTING LINES.
2. PC TO RELOCATE EXISTING WATER HEATER FROM BASEMENT TO JANITOR CLOSET. PC TO PROVIDE WOOD STAND AND GALVANIZED STEEL DRAINPAN TO DRAIN INTO MOP SINK.
3. CONNECT TO EXISTING WATER LINE IN BUILDING, ALL WATER LINES TO BE REPLACED WITH PEX PIPING.
4. REPLACE FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
5. REPLACE WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.

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COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
01/06/2026

KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

DESCRIPTION
SOUTH HILL TOWN OFFICE
211 S MECKLENBURG AVE
SOUTH HILL VA 23970

REVISION

NO	DATE	DESCRIPTION
1	1/06/2026	ADDENDUM NO.1

ISSUED: 09/29/2025
FOR PERMITTING
DESCRIPTION

DRAWN BY: TD
CHECKED BY: REW

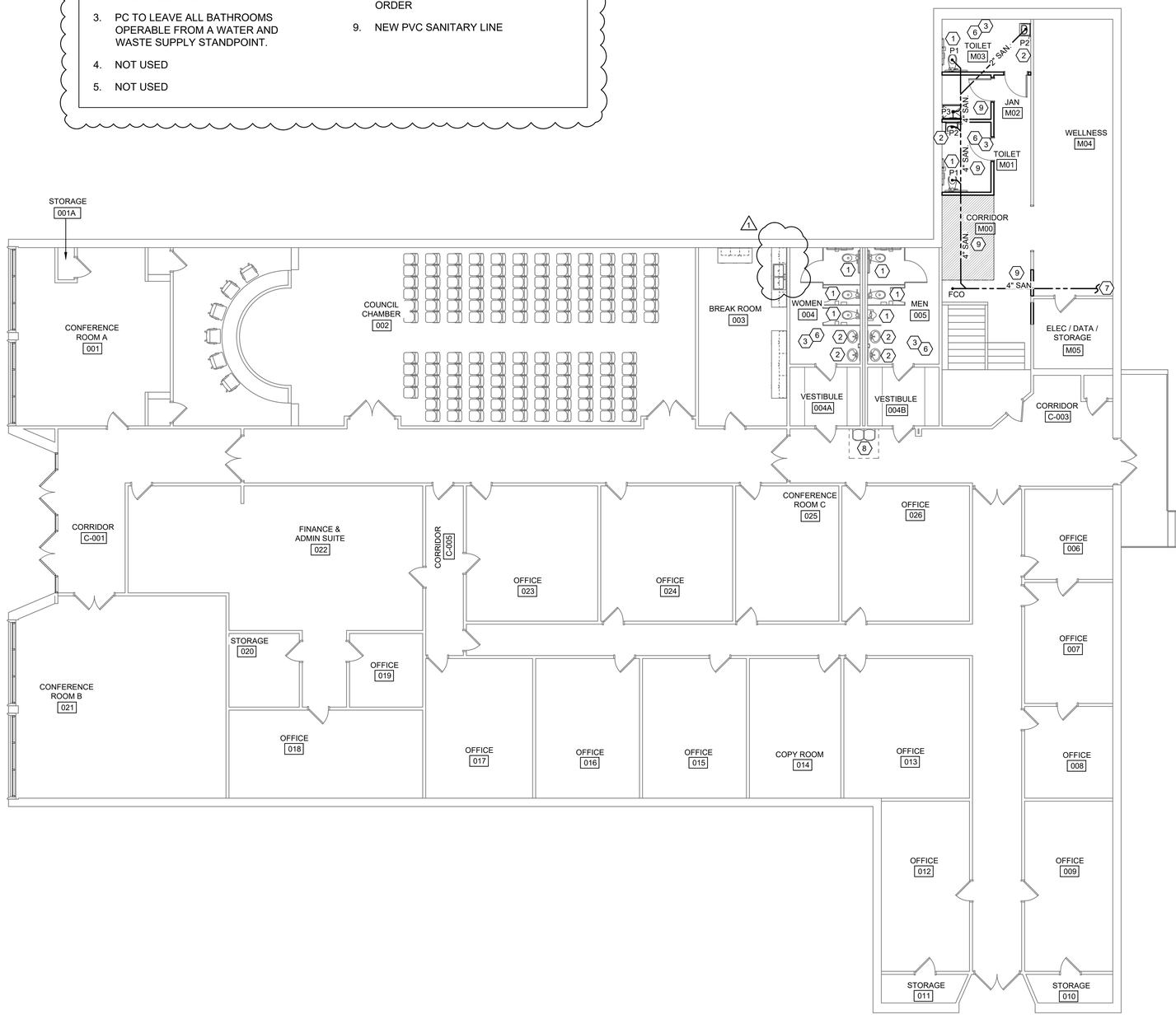
SHEET:
RENOVATIONS - 2025
PLUMBING SCHEDULES & RISER

SHEET NO.
P-101

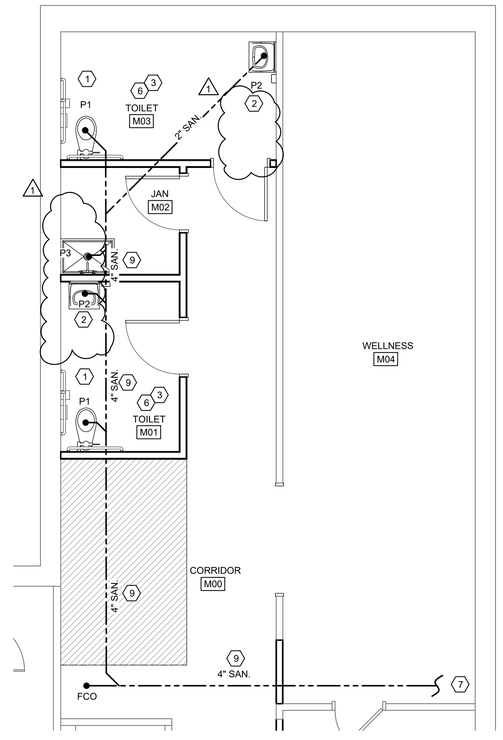
PROJECT NO: 250132

PLUMBING PLAN HEX NOTES

1. REPLACE FAUCET WITH FAUCET FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
2. REPLACE FAUCET WITH FAUCET WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.
3. PC TO LEAVE ALL BATHROOMS OPERABLE FROM A WATER AND WASTE SUPPLY STANDPOINT.
4. NOT USED
5. NOT USED
6. NO SUBSTITUTIONS WITHOUT PREAPPROVAL
7. CONNECT TO EXISTING SEWER LINE IN BASEMENT
8. FIXTURE TO REMAIN, PC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER
9. NEW PVC SANITARY LINE



1 SANITARY PLAN
Scale: 1/8" = 1'-0"



2 SANITARY PLAN DETAIL
Scale: 1/4" = 1'-0"

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7		
6		
5		
4		
3		
2		
1	1/06/2026	ADDENDUM NO. 1

ISSUED: 09/29/2025
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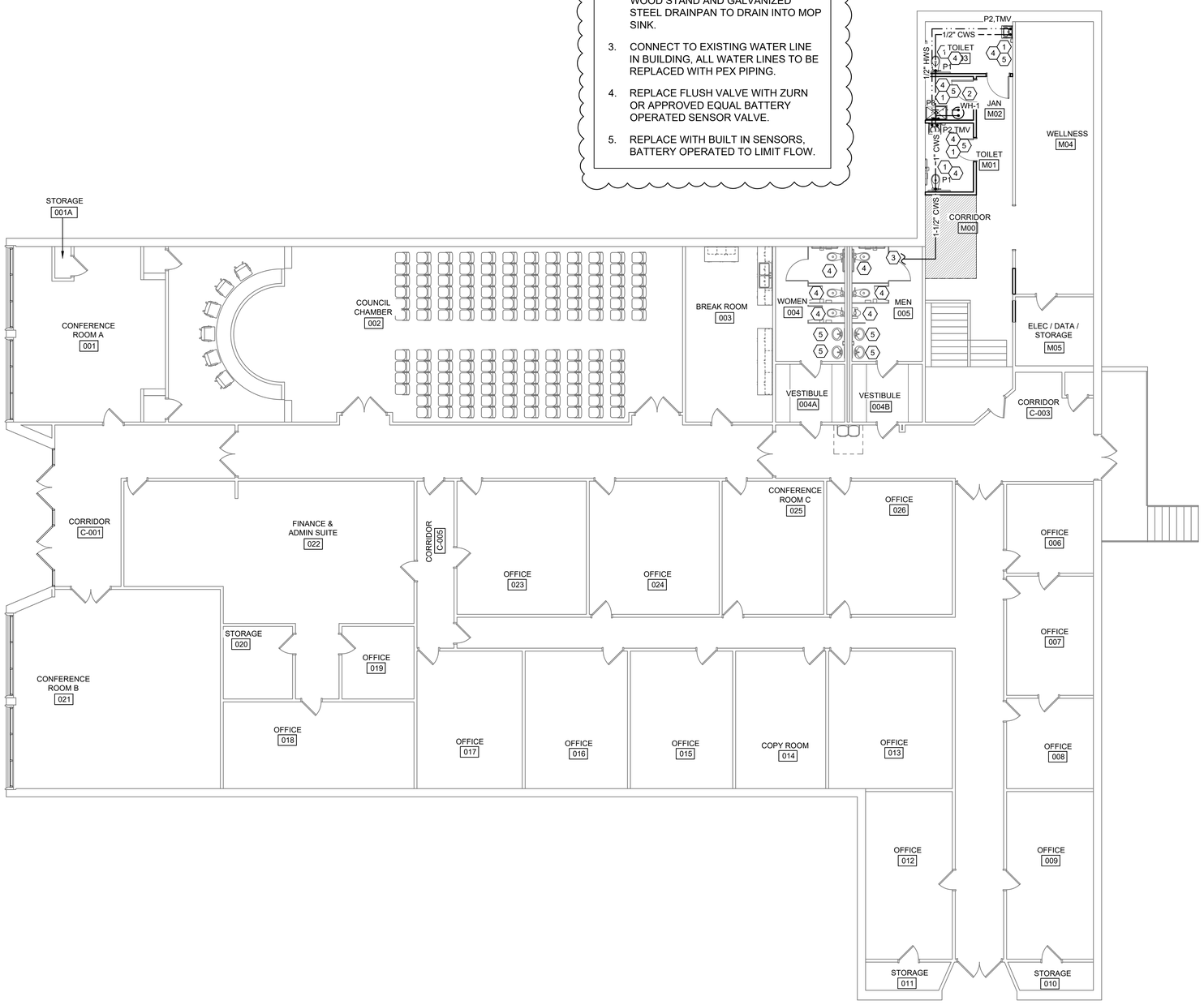
SHEET:
RENNOVATIONS - 2025
PLUMBING PLAN VIEW

SHEET NO.
P-102

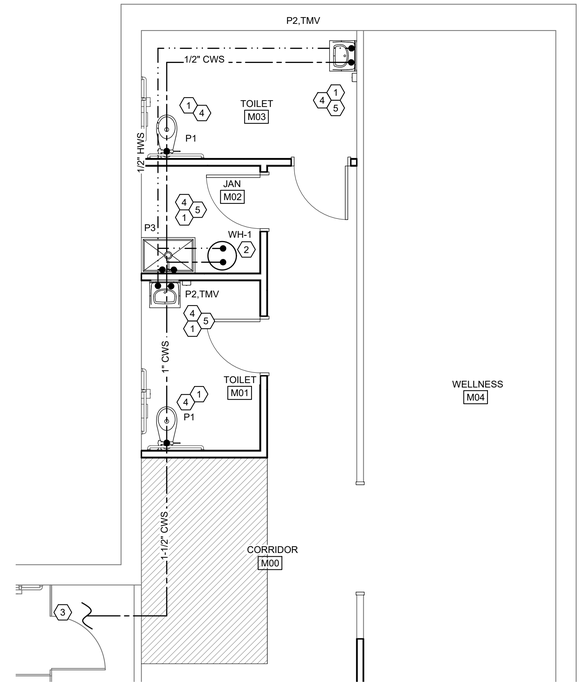
PROJECT NO: 250132

DOMESTIC SUPPLY PLAN HEX NOTES

1. PC TO INSTALL NEW PEX WATER LINES TO REPLACE EXISTING LINES. FIXTURES TO REMAIN.
2. PC TO RELOCATE EXISTING WATER HEATER FROM BASEMENT TO JANITOR CLOSET. PC TO PROVIDE WOOD STAND AND GALVANIZED STEEL DRAINPAN TO DRAIN INTO MOP SINK.
3. CONNECT TO EXISTING WATER LINE IN BUILDING, ALL WATER LINES TO BE REPLACED WITH PEX PIPING.
4. REPLACE FLUSH VALVE WITH ZURN OR APPROVED EQUAL BATTERY OPERATED SENSOR VALVE.
5. REPLACE WITH BUILT IN SENSORS, BATTERY OPERATED TO LIMIT FLOW.



1 DOMESTIC SUPPLY PLAN
Scale: 1/8" = 1'-0"



2 DOMESTIC SUPPLY PLAN DETAIL
Scale: 1/4" = 1'-0"

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REVISION

NO	DESCRIPTION	DATE
1	ADDENDUM NO. 1	1/06/2026

ISSUED: 09/29/2025
FOR PERMITTING
DESCRIPTION

DRAWN BY: TD
CHECKED BY: REW

SHEET:
RENNOVATIONS - 2025
PLUMBING PLAN VIEW

SHEET NO.
P-103

PROJECT NO: 250132

POWER/RECEPTACLE PLAN HEX NOTES

1. RECEPTACLES & DATA PORTS EXISTING TO REMAIN. EC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER. REPLACE W/ EQUAL IF NOT IN GOOD WORKING ORDER.
2. ELECTRICAL PANELS EXISTING TO REMAIN. EC TO CLEAN & INSPECT & VERIFY IN GOOD WORKING ORDER.
3. NOT USED
4. ALL OUTLETS TO BE DUPLEX, COMMERCIAL GRADE
5. NOT USED
6. EC TO ALSO RECONNECT EXISTING CIRCUITS FOR RESTROOMS.
7. NEW RECEPTACLE TO BE ADDED TO SPECIFIED SPACE.
8. FOUR OF THE RECEPTACLES ARE ABOVE THE COUNTER. THREE OF THE RECEPTACLES ARE BELOW THE COUNTER . ALL EXISTING TO REMAIN
9. COUNTER HEIGHT GFCI RECEPTACLE.
10. NOT USED
11. NEW WALL RECEPTACLES REMAIN AT A 12' INTERVAL.

GENERAL NOTES

1. CONNECT ALL TO EXISTING PANELS. EC TO DOCUMENT CIRCUITS IN PANELS. LABEL RECEPTACLES, PANELS, AND CIRCUITS
2. ALL COVERS TO BE OVERSIZE STAINLESS STEEL. COVER PLATES FOR OUTLETS AND SWITCHES.



1 POWER PLAN
Scale: 1/8" = 1'-0"

Kilian Engineering, Inc.
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CORPORATE LICENSE 0407007575

COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
01/06/2026
KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

DESCRIPTION
SOUTH HILL TOWN OFFICE
211 S MECKLENBURG AVE
SOUTH HILL VA 23970

REVISION

NO	DESCRIPTION	DATE
1	ADDENDUM NO. 1	1/06/2026

ISSUED: 09/29/2025
FOR PERMITTING
DESCRIPTION

DRAWN BY: TD
CHECKED BY: REW

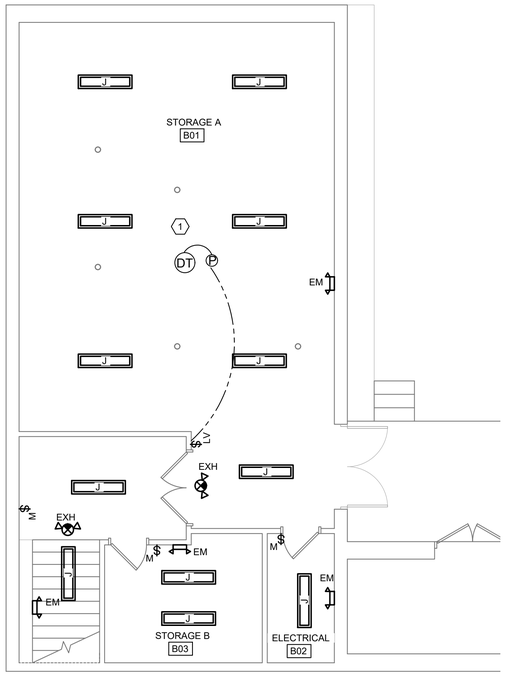
SHEET:
RENOVATIONS 2025

SHEET NO.
E-102

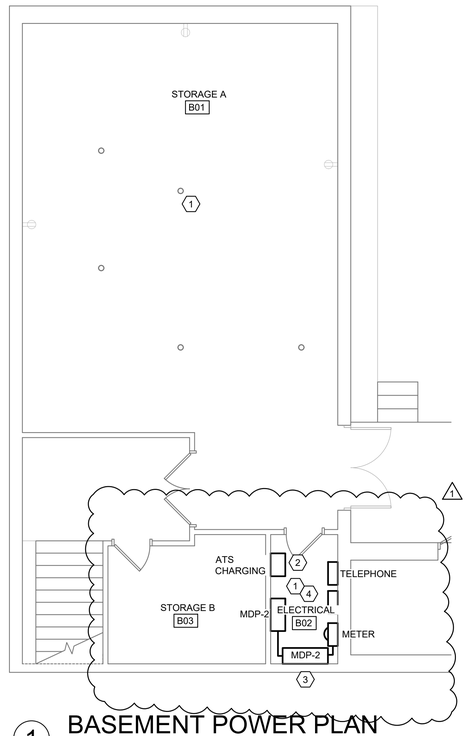
PROJECT NO: 250132

LIGHTING PLAN HEX NOTES

1. MARK J FIXTURE SHALL BE LED PENDANT, SUPPORT FROM STRUCTURE.



1 BASEMENT LIGHTING PLAN
Scale: 3/16" = 1'-0"



1 BASEMENT POWER PLAN
Scale: 3/16" = 1'-0"

POWER PLAN HEX NOTES

1. ALL RECEPTACLES ARE EXISTING TO REMAIN.
2. ATS CHARGING IS OBSOLETE,DEMO BACK TO SOURCE
3. INCOMING UNDERGROUND 208Y/120 3 PHASE ELECTRIC SERVICE FROM UTILITY.
4. EC TO VERIFY SERVICE RECEPTACLES ARE EXISTING AND ARE CLEAN AND IN GOOD WORKING ORDER. IF NOT EC TO ADD GFCI SERVICE RECEPTACLE WHERE REQUIRED AND CIRCUIT INTO NEAREST ROOM CIRCUIT

POWER DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET. EC TO INSTALL 3/4"C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
	DEDICATED RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1 UNLESS OTHERWISE NOTED ON PLANS. VERIFY PLUG TYPE PRIOR TO PURCHASE & INSTALLATION. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596. MAY BE EITHER SIMPLEX, DUPLEX, OR QUAD.
	240V RECEPTACLE	240V RECEPTACLE WITH SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE. VERIFY NEMA PLUG CONFIGURATION.
	QUAD FLOOR RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.

LIGHTING DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$D	DIMMER SWITCH	COMMERCIAL GRADE, 120V, 1500W
$M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DSW-301-W LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSTOPPER LVSW-101-B LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
(DT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(P)	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
⊠	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

VOLTAGE DROP SCHEDULE

120V CIRCUITS < 8 AMPS (1.0 kVA)

DISTANCE TO 1ST LOAD	AWG SIZE
0' - 120'	#12
121' - 190'	#10
191' - 300'	#8
301' - 470'	#6

120V CIRCUITS 9 TO 14 AMPS (1.0-1.7 kVA)

DISTANCE TO 1ST LOAD	AWG SIZE
0' - 65'	#12
66' - 110'	#10
111' - 170'	#8
171' - 270'	#6

WIRE SIZES INDICATED IN BREAKER FEEDER SCHEDULE ARE MINIMUM WIRE SIZES. CONTRACTOR SHALL UPSIZE WIRES BASED ON LOAD AND LENGTH OF RUN AS INDICATED IN SCHEDULE ABOVE.

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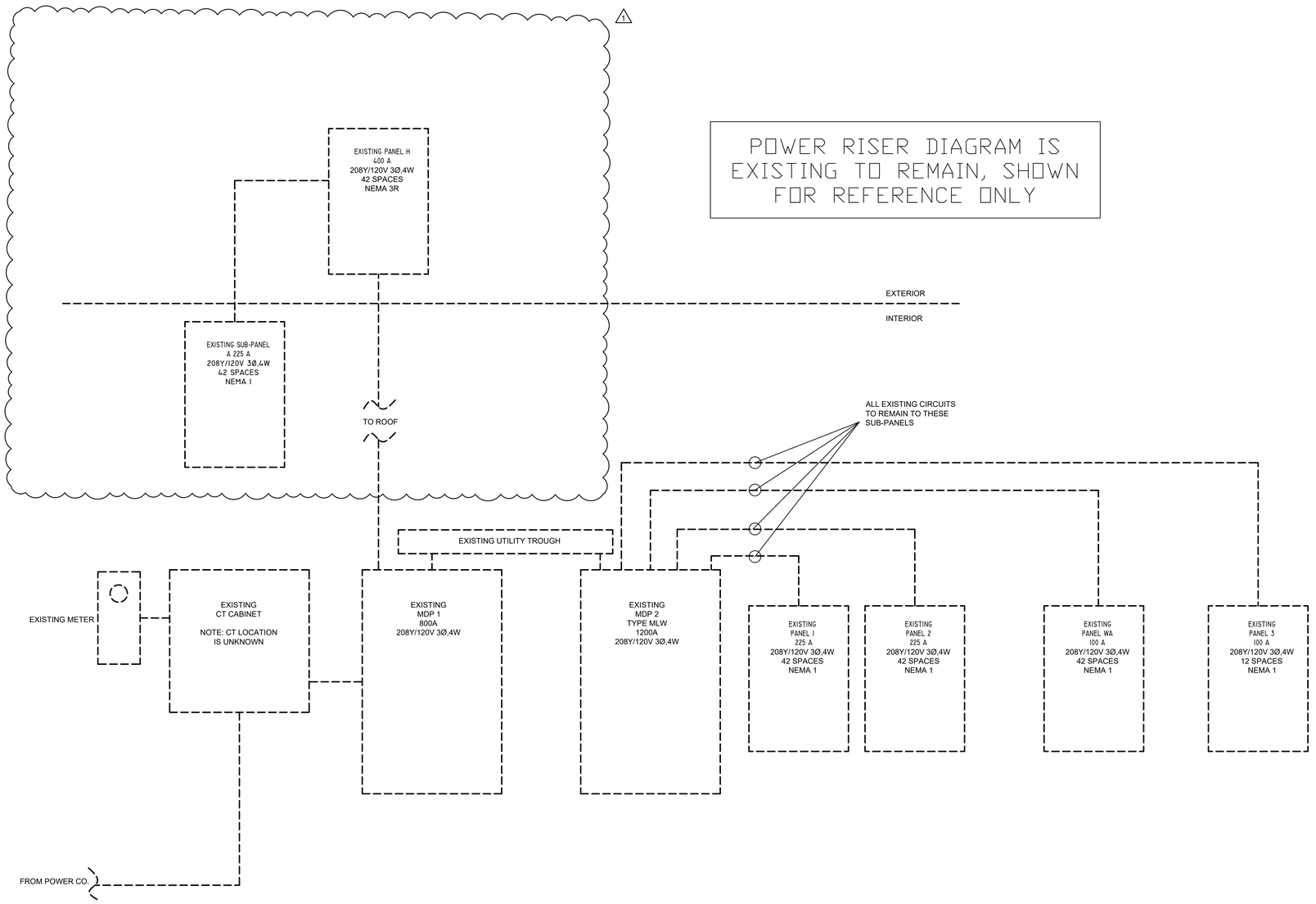
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SHEET:
RENOVATIONS 2025
BASEMENT PLANS & SCHEDULES

SHEET NO.
E-103

PROJECT NO: 250132



POWER RISER DIAGRAM IS EXISTING TO REMAIN, SHOWN FOR REFERENCE ONLY

EC TO TRACE AND VERIFY CIRCUITS BEFORE MODIFICATION

EC TO RE-LABEL ALL PANELS

BREAKER FEEDER SCHEDULE

AMPS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
15A	#12	#12	1/2"
20A	#12	#12	1/2"
25A	#10	#10	3/4"
30A	#10	#10	3/4"
35A	#8	#10	1"
40A	#8	#10	1"
50A	#8	#10	1"
60A	#6	#10	1 1/4"
70A	#4	#8	1 1/4"
80A	#4	#8	1 1/4"
90A	#3	#8	1 1/2"
100A	#3	#8	1 1/2"
110A	#2	#6	2"
125A	#1	#6	2"
150A	1/0	#6	2 1/2"
175A	2/0	#6	2 1/2"
200A	3/0	#6	2 1/2"
225A	4/0	#4	2 1/2"
250A	250 MCM	#4	3"
300A	350 MCM	#4	3 1/2"
350A	500 MCM	#3	4"
400A	2 SETS- 3/0	#3	2 1/2"
500A	2 SETS- 250 MCM	#2	3"
600A	2 SETS- 350 MCM	#1	3 1/2"
700A	3 SETS- 250 MCM	1/0	3"
800A	3 SETS- 300 MCM	1/0	3 1/2"
1000A	3 SETS- 400 MCM	2/0	3 1/2"

1. CONDUCTOR PER POLE PLUS NEUTRAL PER SET. E.C. TO VERIFY NECESSITY OF NEUTRAL FOR EACH CIRCUIT. NEUTRAL MAY BE DELETED IF NOT REQUIRED FOR INDIVIDUAL PIECES.

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SHEET:
RENOVATIONS 2025
CONDUCTOR SIZE TABLE

SHEET NO.
E-104

PROJECT NO: 250132

EXISITING PANEL A

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	AHU-1	30/2	2.50	A	0.00	20/1	SPARE	2
3			2.50	B	2.50	30/2	AHU-2	4
5	AHU-3	30/2	2.50	C	2.50			6
7			2.50	A	2.50	30/2	AHU-4	8
9	AHU-5	30/2	2.50	B	2.50			10
11			2.50	C	4.99	60/2	AHU-6	12
13	AHU-7	60/2	4.99	A	4.99			14
15			4.99	B	4.99	60/2	AHU-8	16
17	AHU-9	60/2	4.99	C	4.99			18
19			4.99	A	0.00	20/1	SPARE	20
21	NEW COUNCIL RECEPTS	20/1	0.72	B	0.00	20/1	SPARE	22
23	NEW HALLWAY RECEPTS	20/1	0.36	C	0.36	20/1	NEW BATHROOM RECEPTS	24
25	SPARE	20/1	0.00	A	0.00	20/1	SPARE	26
27	NEW ELEC/STORAGE RECEPTS	20/1	1.08	B	0.00	20/1	SPARE	28
29	NEW WELLNESS RECEPTS	20/1	1.08	C	0.18	20/1	PANEL A SERVICE RECEPT	30
31	SPACE	--	0.00	A	0.00	--	SPACE	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS			
			A	22.47	187.25			
			B	21.78	181.5			
			C	24.45	203.75			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		225A
MAIN CIRCUIT BREAKER RATING		225A MB
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA1
MOUNTING		RECESSED

EXISTING PANEL H (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	2 TON HP	25/2	2.08	A	2.08	25/2	2 TON HP	2
3			2.08	B	2.08			4
5	2 TON HP	25/2	2.08	C	2.08	25/2	2 TON HP	6
7			2.08	A	2.08			8
9	2 TON HP	25/2	2.08	B	4.16	50/2	4 TON HP	10
11			2.08	C	4.16			12
13	SPARE	20/1	0.00	A	0.00	20/1	SPARE	14
15	5 TON HP	60/2	4.99	B	0.00	20/1	SPARE	16
17			4.99	C	24.45			18
19	5 TON HP	60/2	4.99	A	25.29	225/3	PANEL A	20
21			4.99	B	24.60			22
23	SPARE	20/1	0.00	C	4.16	50/2	4 TON HP	24
25	SPARE	20/1	0.00	A	4.16			26
27	SPACE	--	0.00	B	0.00	--	SPACE	28
29	SPACE	--	0.00	C	0.00	--	SPACE	30
31	SPACE	--	0.00	A	0.00	--	SPACE	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS			
			A	42.76	356.33			
			B	44.98	374.83			
			C	44.00	366.67			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		400A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 3R
MOUNTING		SURFACE

EXISTING PANEL 1 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	COUNCIL ROOM LIGHT	6
7	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	RESTROOM	10
11	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	12
13	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	14
15	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	16
17	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	18
19	EXISTING BREAKER	20/2	0.00	A	0.00	20/1	COURT OFFICE	20
21			0.00	B	0.00	20/1	EXISTING BREAKER	22
23	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	24
25	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	26
27	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	28
29	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	KITCHEN PUMP	30
31	TELEPHONE	20/1	0.00	A	0.00	20/1	COUNTER RECEPT.	32
33	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	34
35	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	36
37	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	38
39	EXISTING BREAKER	20/2	0.00	B	0.00	20/1	COUNTER RECEPT.	40
41			0.00	C	0.00	20/1	EXISTING BREAKER	42
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		225A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

EXISTING PANEL 2 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	COUNTER REC.	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	6
7	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	10
11	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	12
13	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	14
15	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	16
17	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	OUTSIDE LIGHTS	18
19	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	20
21	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	22
23	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	24
25	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	26
27	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	28
29	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	30
31	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	UPSTAIRS LIGHTS	32
33	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	34
35	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	FAN	36
37	EXISTING BREAKER	20/1	0.00	A	0.00	20/2	HOT WATER	38
39	EXISTING BREAKER	20/1	0.00	B	0.00			40
41	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	EXISTING BREAKER	42
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		225A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

EXISTING PANEL WA (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	WINDOW SPOT	20/1	0.00	A	0.00	20/1	WINDOW SPOT LIGHTS	2
3	WINDOW RECEPT	20/1	0.00	B	0.00	20/1	WINDOW SPOT LIGHTS	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	WINDOW SPOT LIGHTS	6
7	WINDOW LIGHT	20/1	0.00	A	0.00	20/1	SPARE	8
9	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	WINDOW SPOT	10
11	WINDOW SPOT	20/1	0.00	C	0.00	20/1	SPARE	12
13	SPACE	--	0.00	A	0.00	--	SPACE	14
15	SPACE	--	0.00	B	0.00	--	SPACE	16
17	SPACE	--	0.00	C	0.00	--	SPACE	18
19	SPACE	--	0.00	A	0.00	--	SPACE	20
21	CONTACTOR	40/3	0.00	B	0.00	20/1	EXHAUST FAN	22
23			0.00	C	0.00	20/1	SUPPLY FAN HEAT	24
25			0.00	A	0.00	20/1	EXISTING BREAKER	26
27	SIDE DOOR HEATER	40/3	0.00	B	0.00	20/1	EXISTING BREAKER	28
29			0.00	C	0.00	20/1	EXISTING BREAKER	30
31			0.00	A	0.00	20/1	EXISTING BREAKER	32
33	SPACE	--	0.00	B	0.00	--	SPACE	34
35	SPACE	--	0.00	C	0.00	--	SPACE	36
37	SPACE	--	0.00	A	0.00	--	SPACE	38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41	SPACE	--	0.00	C	0.00	--	SPACE	42
			PH	kVA	AMPS	--	SPACE	
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		100A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

EXISTING MDP2 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1			0.00	A	0.00			2
3	EXISTING BREAKER	200/3	0.00	B	0.00	150/3	EXISTING BREAKER	4
5			0.00	C	0.00			6
7			0.00	A	0.00			8
9	EXISTING BREAKER	150/3	0.00	B	0.00	--	SPACE	10
11			0.00	C	0.00			12
13			0.00	A	0.00			14
15	EXISTING BREAKER	100/3	0.00	B	0.00	100/3	EXISTING BREAKER	16
17			0.00	C	0.00			18
19			0.00	A	0.00			20
21	SPACE	--	0.00	B	0.00	--	SPACE	22
23			0.00	C	0.00			24
25			0.00	A	0.00			26
27	SPACE	--	0.00	B	0.00	--	SPACE	28
29			0.00	C	0.00			30
31			0.00	A	0.00			32
33	EXISTING BREAKER	__/3	0.00	B	0.00	60/3	EXISTING BREAKER	34
35			0.00	C	0.00			36
37			0.00	A	0.00			38
39	SPACE	--	0.00	B	0.00	--	SPACE	40
41			0.00	C	0.00			42
43			0.00	A	0.00			44
45	SPACE	--	0.00	B	0.00	--	SPACE	46
47			0.00	C	0.00			48
49			0.00	A	0.00			50
51	EXISTING BREAKER	40/3	0.00	B	0.00	__/3	EXISTING BREAKER	52
53			0.00	C	0.00			54
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		1200A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K - EC TO VERIFY
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

EXISTING MDP1

CKT	LOAD	BKR	LOAD kVA	PH
1	EXISTING BREAKER	600/3	0.00	A
2			0.00	B
3			0.00	C
4	MDP#2 TOP	700/3	0.00	A
5			0.00	B
6			0.00	C
7*	PANEL H	400/3	42.76	A
8*			43.18	B
9*			42.02	C
10	SPACE	--	0.00	A
11			0.00	B
12			0.00	C
13	SPACE	--	0.00	A
14			0.00	B
15			0.00	C
16	SPACE	--	0.00	A
17			0.00	B
18			0.00	C

PH	kVA	AMPS
A	42.76	356.33
B	43.18	359.83
C	42.02	350.17

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		800A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K - EC TO VERIFY
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

*NEW BREAKER REPLACING OLD BREAKER OF THE SAME SIZE, EC TO VERIFY ALL EXISTING LINES PRIOR TO MODIFICATION

EXISTING PANEL 3 (FOR REFERENCE ONLY)

CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	EXISTING BREAKER	20/1	0.00	A	0.00	20/1	EXISTING BREAKER	2
3	EXISTING BREAKER	20/1	0.00	B	0.00	20/1	EXISTING BREAKER	4
5	EXISTING BREAKER	20/1	0.00	C	0.00	20/1	ELECTRONICS/ STORE SYSTEM	6
7	SPACE	--	0.00	A	0.00	--	SPACE	8
9	SPACE	--	0.00	B	0.00	--	SPACE	10
11	SPACE	--	0.00	C	0.00	--	SPACE	12
			PH	kVA	AMPS			
			A	0.00	0			
			B	0.00	0			
			C	0.00	0			

VOLTAGE/PHASE		208Y/120V, 3P, 4W
BUS RATING		100A
MAIN CIRCUIT BREAKER RATING		MLO
AIC RATING		22K
SERVICE ENTRANCE RATED		NO
ENCLOSURE		NEMA 1
MOUNTING		RECESSED

NEC ELECTRIC DEMAND SUMMARY 208Y/120V, 3P, 4W

EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	kVA C	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	100%	4.50	4.50	4.50	13.50	220.12	10384 SF X 1.3 VA/SF
RECEPTACLES < 10 kVA	100%	0.00	1.80	1.98	3.78	220.44	
HVAC	100%	39.94	40.36	42.02	122.32	--	BASED ON MCA
EXISTING LOAD	125%	72.10	72.10	72.10	216.30	220.87	
DEMAND kVA PER PHASE		116.54	118.76	120.60			
DEMAND AMPS PER PHASE		970.78	989.27	1004.60			

NOTE: ADDED RECEPTACLE LOAD SHOWN ONLY

*THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

EC TO TRACE AND VERIFY CIRCUITS BEFORE MODIFICATION

EC TO RE-LABEL ALL PANELS, NO HAND WRITTEN LABELS

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CORPORATE LICENSE 0407007575

COMMONWEALTH OF VIRGINIA
MICHAEL W. KILIAN
Lic. No. 37178
PROFESSIONAL ENGINEER
01/06/2026

KILIAN ENGINEERING, INC. CORPORATE SEAL 407007575 VIRGINIA

DESCRIPTION
SOUTH HILL TOWN OFFICE
211 S MECKLENBURG AVE
SOUTH HILL VA. 23970

REVISION

NO	DESCRIPTION	DATE
1	ADDENDUM NO. 1	1/06/2026

ISSUED: 09/29/2025

FOR PERMITTING
DESCRIPTION

DRAWN BY: TD
CHECKED BY: REW

SHEET:
RENOVATIONS 2025
EXISTING PANEL SCHEDULES

SHEET NO.
E-105

PROJECT NO: 250132