CITY OF VINELAND

VINELAND, NEW JERSEY

SPECIFICATIONS

FOR

BUILDING ALTERATIONS TO THE VINELAND MUNICIPAL ELECTRIC UTILITY LOCATED AT 415 NORTH WEST AVENUE

COV BID # 2026-10

BID OPENING: THURSDAY APRIL 30, 2026
PREVAILING TIME: 2:00 P.M.

DEPARTMENT OF FINANCE
DIVISION OF PURCHASING
640 E WOOD STREET
P.O. BOX 1508
VINELAND, NJ 08362-1508

Miguel A. Mercado, QPA
Purchasing Agent
(856) 794-4040 Phone
(856) 405-4605 Facsimile
mmercado@vinelandcity.org

CITY OF
VINELAND
WHERE IT'S ALWAYS GROWING SEASON

640 E. WOOD STREET
P.O. BOX 1508
VINELAND, NJ 08362-1508

DEPARTMENT OF FINANCE
DIVISION OF PURCHASING
MIGUEL A. MERCADO, QPA
PURCHASING AGENT

PHONE: (856) 794-4040
FAX: (856) 405-4605

NOTICE TO BIDDERS

Sealed bids will be received by the Purchasing Agent of the City of Vineland on Thursday, April 30, 2026, at 2:00 p.m. prevailing time in the Purchasing Department, 5th Fl. City Hall, 640 E. Wood Street, Vineland, New Jersey 08360, at which time and place, bids will be opened and read in public for the furnishing of:

COV BID 2026-10 BUILDING ALTERATIONS TO THE VINELAND MUNICIPAL ELECTRIC UTILITY LOCATED AT 415 NORTH WEST AVENUE

A Non-Mandatory Pre-Bid Meeting will be held on Wednesday, March 25, 2026, at 10:00 AM at 211 N.W. Avenue, Vineland, NJ 08360, with a site visit to follow, if needed. Attendance is not mandatory but is strongly recommended.

Bid must be submitted in **duplicate** and shall be enclosed in an opaque sealed envelope, addressed to "Division of Purchasing, City of Vineland, 640 E. Wood Street, PO Box 1508, Vineland, NJ 08362-1508."

Bidders shall comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17-27 et seq.

You must submit paper documents as your bid package. We cannot accept electronic copies. The documents to be submitted start with the Checklist. **PLEASE DO NOT SUBMIT THE SPECIFICATIONS WITH YOUR BID PACKAGE. All original signatures must be on one document** (Please use blue ink for the signatures). The duplicate can be a photocopy.

If you have any questions, please contact the Purchasing Agent at the above number or email PurchasingOffice@vinelandcity.org

DO NOT STAPLE DOCUMENTS
NO DOUBLE-SIDED COPIES

CITY OF VINELAND

GENERAL INSTRUCTIONS

(CONSTRUCTION)

I. SUBMISSION OF BIDS

A. Sealed bids shall be received in accordance with public advertisement as required by law, with a copy of said notice being attached hereto and made a part of these specifications.

B. Each bid shall be submitted on the proposal form attached and shall be submitted in a clearly marked sealed envelope addressed to:

If delivered:	If mailed:
DIVISION OF PURCHASING **640 E. WOOD STREET** **5TH FLOOR** **VINELAND NJ 08360**	**DIVISION OF PURCHASING** **640 E. WOOD STREET 5TH FL** **PO BOX 1508** **VINELAND NJ 08362-1508**

* Do not use PO Box on Overnight Delivery Services, i.e. (Fed-Ex)

Bidder's name, address, bid category, and due date must appear on the outside of the BID ENVELOPE containing the bid.

C. Sealed bids will be received by the Purchasing Agent or designated representative, at the time and location as stated in the Notice to Bidders, and at such time and place will be publicly opened and read aloud.

D. It is the bidder's responsibility to see that bids are presented to the Purchasing Agent on the hour **and at the place designated. Bids may be hand delivered or mailed; however, the City disclaims any** responsibility for bids forwarded by regular or express mail. If the bid is sent by express mail service, the designation in sub-section B, above, must also appear on the outside of the express mail envelope. Bids received after the designated time and date will be returned unopened. The City of Vineland shall not be responsible for late postal or overnight delivery, nor shall postmark dates or overnight dates be considered in honoring of bids. The City of Vineland shall not be responsible for bidder's hand delivering bids who arrive late or to the wrong location.

E. Sealed bids forwarded to the City before the time of opening of bids may be withdrawn upon written application of the bidder who shall be required to produce evidence showing that the individual is or represents the principal or principals involved in the bid. Once bids have been opened, they shall remain firm for a period of sixty (60) calendar days.

F. All prices and amounts must be written in ink or preferably machine printed. Bids containing any conditions, omissions, unexplained erasures or alterations, items not called for in the bid proposal form, attachment of additive information not required by the specifications, or irregularities of any kind, may be rejected by the City. Any changes, whiteouts, strikeouts, etc. in the bid must be initialed in ink by the person signing the bid.

G. Bids will be received only on the bidding forms attached to this specification or a true copy thereof with all notations to be done in ink or typed and signatures must be done in ink. **ONLY ORIGINAL SIGNATURES ON ALL DOCUMENTS WILL BE ACCEPTED. RUBBER STAMPS, COMPUTER GENERATED SIGNATURES, COPIER GENERATED SIGNATURES, OR ANY OTHER ARTIFICIAL SIGNATURES SHALL NOT BE ACCEPTABLE AND SHALL BE REASON FOR REJECTION.** City of Vineland will not be held responsible for any erroneous pages or pages missing from this bid document if it is obtained from a source other than the Purchasing Department of the City of Vineland. City of Vineland will not be held responsible if bidders (vendors) fail to receive any updates or addenda to the specification, if they haven't contacted the Purchasing Department.

H. Each bid proposal form must give the full business address, business phone, fax, the contact person of the bidder, and be signed by an authorized representative as follows:

- Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing.
- Bids by corporations must be signed in the legal name of the corporation, followed by the name of the State in which incorporated and must contain the signature and designation of the president, secretary or other person authorized to bind the corporation in the matter.
- Bids by sole-proprietorship shall be signed by the proprietor.
- When requested, satisfactory evidence of the authority of the officer signing shall be furnished.

I. Bidder should be aware of the following statutes that represent "Truth in Contracting" laws:

- N.J.S.A. 2C:21-34, et seq. governs false claims and representations by bidders. It is a serious crime for the bidder to knowingly submit a false claim and/or knowingly make material misrepresentation.
- N.J.S.A. 2C:27-10 provides that a person commits a crime if said person offers a benefit to a public servant for an official act performed or to be performed by a public servant, which is a violation of official duty.
- N.J.S.A. 2C:27-11 provides that a bidder commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.
- Bidder should consult the statutes or legal counsel for further information.

J. Potential bidders are hereby cautioned that they are bidding at their own risk and that the specifications/bid packages may or may not be complete if the specifications/bid packages were provided by a third-party supplier.

The City shall not be responsible for third party supplied specifications/bid packages.

K. The City reserves the right to reject individual and/or all bids in accordance with law.

L. Any prospective bidder who wishes to challenge a bid specification shall file such challenge in writing with the Purchasing Agent no less than three (3) business days prior to the opening of the bids. Challenges filed after that time shall be considered void and having no impact on the contracting unit or the award of a contract; N.J.S.A. 40A: 11-13 (e).

M. Contracts shall be awarded to the lowest responsive and responsible bidder. City Council reserves the right to reject any and all bids and to waive minor discrepancies therein. City Council also reserves the right to split bids, award individual items, or to award groups of items and categories of items.

N. Questions concerning this bid shall be directed in writing to the Division of Purchasing, Attention: Miguel A. Mercado, Purchasing Agent, either by facsimile at (856) 405-4605 or by email at PurchasingOffice@vinelandcity.org Last day for questions is noon, Wednesday, April 15, 2026.

II. BID SECURITY AND BONDING REQUIREMENTS

The following provisions if indicated by an (X), shall be applicable to this bid and be made a part of the bid documents:

[X] A. BID GUARANTEE

Bidder shall submit with the bid a certified check, cashier's check or a bid bond in the amount of ten percent (10%) of the total price bid, but not in excess of $20,000, payable unconditionally to the City.

When submitting a Bid Bond, it shall contain Power of Attorney for full amount of Bid Bond from a surety company authorized to do business in the State of New Jersey and acceptable to the City.

The check or bond of the unsuccessful bidder(s) shall be returned pursuant to N.J.S.A. 40A:11-24a. The check or bond of the bidder to whom the contract is awarded shall be retained until a contract is executed and the required performance bond or other security is submitted.

The check or bond of the successful bidder shall be forfeited if the bidder fails to enter into a contract pursuant to N.J.S.A. 40A:11-21.

Failure to submit a bid guarantee shall result in rejection of the bid.

[X] B. CONSENT OF SURETY

Bidder shall submit with the bid a Certificate (Consent of Surety) with Power of Attorney for full amount of bid price from a Surety Company authorized to do business in the State of New Jersey and acceptable to the City stating that it will provide said bidder with a Performance Bond in the full amount of the bid. This certificate shall be obtained in order to confirm that the bidder to whom the contract is awarded will furnish Performance and Payment Bonds from an acceptable surety company on behalf of said bidder, any or all subcontractors or by each respective subcontractor or by any combination thereof which results in performance security equal to the total amount of the contract, pursuant to N.J.S.A. 40A:11-22.

Failure to submit a consent of surety shall result in rejection of the bid.

[X] C. PERFORMANCE BOND

Successful bidder shall simultaneously with the delivery of the executed contract, submit an executed bond in the amount of one hundred percent (100%) of the acceptable bid as security for the faithful performance of this contract.

The performance bond provided shall not be released until final acceptance of the whole work and then only if any liens or claims have been satisfied. The surety on such bond or bonds shall be a duly authorized surety company authorized to do business in the State of New Jersey pursuant to N.J.S.A. 17:31-5.

Failure to submit this with the executed contract shall be cause for declaring the contract null and void pursuant to N.J.S.A. 40A:11-22.

[X] D. LABOR AND MATERIAL (PAYMENT) BOND

Bidder shall with the delivery of the performance bond submit an executed payment bond to guarantee payment to laborers and suppliers for the labor and material used in the work performed under the contract.

Failure to submit a labor and material bond with the performance bond shall be cause for declaring the contract null and void.

☐ E. MAINTENANCE BOND

Upon acceptance of the work by the City, the contractor shall submit a maintenance bond (N.J.S.A. 40A:11-16.3) in an amount not to exceed **100%** of the project costs guaranteeing against defective quality of work or materials for the period of:

_____ 1 year
_____ 2 years

III. INTERPRETATION AND ADDENDA

A. The bidder understands and agrees that its bid is submitted on the basis of the specifications prepared by the City. The bidder accepts the obligation to become familiar with these specifications.

B. Bidders are expected to examine the specifications and related bid documents with care and observe all their requirements. Ambiguities, errors or omissions noted by bidders should be promptly reported in writing to the Purchasing Agent. Any prospective bidder who wishes to challenge a bid specification shall file such challenges in writing with the contracting agent no less than three business days prior to the opening of the bids. Challenges filed after that time shall be considered void and having no impact on the contracting unit or the award of a contract pursuant to N.J.S.A. 40A:11-13. In the event the bidder fails to notify the City of such ambiguities, errors or omissions, the bidder shall be bound by the requirements of the specifications and the bidder's submitted bid.

C. No oral interpretation, and or clarification of the meaning of the specifications for any goods and services will be made to any bidder. Such request shall be in writing, addressed to the Purchasing Agent. In order to be given consideration, a written request must be received at least ten (10) business days prior to the date fixed for the opening of the bid for goods and services.

All interpretations, clarifications and any supplemental instructions will be in the form of written addenda to the specifications and will be distributed to all prospective bidders. All addenda so issued shall become part of the specification and bid documents and shall be acknowledged by the bidder in the bid. The City's interpretations or corrections thereof shall be final.

When issuing addenda, the City shall provide required notice prior to the official receipt of bids to any person who has submitted a bid or who has received a bid package pursuant to N.J.S.A. 40A:11-23c.1.

D. Discrepancies in Bids

1. Ditto marks are not considered writing or printing and shall not be used.

2. In the event that there is a discrepancy between the unit prices and the extended totals, the unit prices shall prevail. In the event there is an error of the summation of the extended totals, the computation by the City of the extended totals shall govern.

E. Pre-Bid Conference

☐ If stated in the Notice to Bidders:
A Pre-Bid Conference is not required for this bid.

☒ A non-mandatory pre-bid conference for this proposal will be held on Wednesday, March 25, 2026, 10:00 am at 415 N.W. Avenue. Attendance is not mandatory but is strongly recommended. Failure to attend does not relieve the bidder of any obligations or requirements. A site visit will immediately follow the pre-bid.

IV. BRAND NAMES, STANDARDS OF QUALITY AND PERFORMANCE

A. Brand names and/or descriptions used in these specifications are to acquaint bidders with the types of goods and services desired and will be used as a standard by which goods and services offered as equivalent will be evaluated.

B. Variations between the goods and services described and the goods and services offered are to be fully identified and described by the bidder on a separate sheet and submitted with the bid proposal form. Vendor literature WILL NOT suffice in explaining exceptions to these specifications. In the absence of any exceptions by the bidder, it will be presumed and required that the goods and services as described in the bid specification be provided or performed.

C. It is the responsibility of the bidder to document and/or demonstrate the equivalency of the goods and services offered. The City reserves the right to evaluate the equivalency of the goods and services.

D. In submitting its bid, the bidder certifies that the goods and services to be furnished will not infringe upon any valid patent or trademark and that the successful bidder shall, at its own expense, defend any and all actions or suits charging such infringement, and will save the City harmless from any damages resulting from such infringement.

E. Only manufactured and farm products of the United States, wherever available, shall be used pursuant to N.J.S.A. 40A:11-18.

F. The contractor shall guarantee any or all goods and services supplied under these specifications. Defective or inferior goods shall be replaced at the expense of the contractor. The contractor will be responsible for return freight or restocking charges.

V. INSURANCE AND INDEMNIFICATION

The insurance documents as listed below shall include but are not limited to the following coverage's. (where insurance requirements are listed under other sections of these specifications, the higher limits will prevail.)

A. INSURANCE REQUIREMENTS

1. Worker's Compensation Insurance

Workers Compensation insurance shall be maintained in full force during the life of the contract, covering all employees engaged in performance of the contract pursuant to N.J.S.A. 34:15-12(a) and N.J.A.C. 12:235-1.6. Statutory Limit for Workers' Compensation and $500,000 for Employer's Liability.

2. General Liability Insurance

General liability insurance shall be provided with limits of not less than $1,000,000 any one person/any one accident for bodily injury and property damage and $3,000,000 aggregate, and shall be maintained in full force during the life of the contract.

3. Automobile Liability Insurance

Automobile liability insurance covering contractor for claims arising from owned, hired and non-owned vehicles with limits of not less than $1,000,000 any one person / any one accident for bodily injury and property damage, and shall be maintained in full force during the life of the contract.

4. Other Forms of Insurance Required

B. CERTIFICATES OF THE REQUIRED INSURANCE

Certificates of Insurance for those policies required above shall be submitted with the contract. Such coverage shall be with an insurance company authorized to do business in the State of New Jersey and shall name the City of Vineland as an additional insured.

Self-insured contractors shall submit an affidavit attesting to their self-insured coverage and shall name the City of Vineland as an additional insured.

C. INDEMNIFICATION

Bidder shall indemnify and hold harmless the City of Vineland from all claims, suits or actions, and damages or costs of every name and description to which the City of Vineland may be subjected or put by reason of injury to the person or property of another, or the property of the City of Vineland resulting from negligent acts or omissions on the part of the contractor, the contractor's agents, servants or subcontractors in the delivery of goods and services, or in the performance of the work under the contract.

VI. PRICING INFORMATION FOR PREPARATION OF BIDS

A. The City of Vineland is exempt from any local, state or federal sales, use or excise tax.

B. Estimated Quantities (Open-End Contracts): The City has attempted to identify the item(s) and the estimated amounts of each item bid to cover its requirements; however, past experience shows that the amount ordered may be different than that submitted for bidding. The right is reserved to decrease or increase the quantities specified in the specifications pursuant to N.J.A.C. 5:30-11.2 and 11.10. NO MINIMUM PURCHASE IS IMPLIED OR GUARANTEED.

C. Contractor shall be responsible for obtaining any applicable permits or licenses from any government entity that has jurisdiction to require the same. All bids submitted shall have included this cost.

D. Bidders shall insert prices for furnishing goods and services required by these specifications. Prices shall be net, including any charges for packing, crating, containers, etc. All transportation charges shall be fully prepaid by the contractor, F.O.B. destination and placement at locations specified by the City. As specified, placement may require inside deliveries. No additional charges will be allowed for any transportation costs resulting from partial shipments made for the contractor's convenience.

VII. STATUTORY AND OTHER REQUIREMENTS

The following are mandatory requirements of this bid and contract.

A. MANDATORY AFFIRMATIVE ACTION CERTIFICATION

No firm may be issued a contract unless it complies with the affirmative action provisions of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27-1 et seq. The following information summarizes the full, required regulatory text, which is included as Exhibit A of this bid specification.

1. Goods and Services (including professional services) Contracts

Each contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

i. A photocopy of a valid letter that the contractor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter); or

ii. A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4; or

iii. A photocopy of an Employee Information Report (Form AA 302) provided by the Division and distributed to the public agency to be completed by the contractor in accordance with N.J.A.C. 17:27-4.

2. Maintenance/Construction Contracts

After notification of award, but prior to signing the contract, the contractor shall submit to the public agency compliance officer and the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division) an initial project workforce report (Form AA201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7.

The contractor shall also submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of the contract to the Division and to the public agency compliance officer. The contractor shall also cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the job and/or off-the-job programs for outreach and training of minorities and women.

B. AMERICANS WITH DISABILITIES ACT OF 1990

Discrimination on the basis of disability in contracting for the purchase of goods and services is prohibited. Bidders are required to read Americans with Disabilities language that is included as Appendix A of this specification and agree that the provisions of Title II of the Act are made a part of the contract. The contractor is obligated to comply with the Act and to hold the City harmless.

C. STOCKHOLDER DISCLOSURE

N.J.S.A. 52:25-24.2 provides that no corporation, partnership, limited partnership, limited liability corporation, limited liability partnership, Subchapter S corporation or sole proprietorship, shall be awarded any contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the bid or accompanying the bid of said corporation, partnership, limited partnership, limited liability corporation, limited liability partnership, Subchapter S corporation or sole proprietorship, bidders shall submit a statement setting forth the names and addresses of all stockholders in the corporation or partnership who own (10%) ten percent or more of its stock of any class, or of all individual partners in the partnership who own a ten percent or greater interest therein. The included Statement of ownership shall be completed and attached to the bid proposal. This requirement applies to all forms of corporations and partnerships, including, but not limited to, limited partnerships, limited liability corporations, limited liability partnerships and Subchapter S corporations. Failure to submit a stockholder disclosure document shall result in rejection of the bid.

D. PROOF OF BUSINESS REGISTRATION

N.J.S.A. 52:32-44 requires that each bidder (contractor) submit proof of business registration. Certificate must be submitted prior to award of the contract and the bidder had to have obtained the BRC prior to receipt of bids. A BRC is obtained from the New Jersey Division of Revenue. Information on obtaining a BRC is available on the internet at www.nj.gov/njbgs or by phone at (609) 292-1730. N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that **knowingly** provide goods or perform services for a contractor fulfilling this contract:

1) The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
2) Prior to receipt of final payment from a contracting agency, a contractor must submit to the contacting agency an accurate list of all subcontractors or attest that none was used;
3) During the term of this contract, the contractor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit to the Director, New

Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State.

A contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-1730.

If boxes of the following items are checked, they are mandatory requirements of the bid proposal and contract.

☐ E. NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW ACT

The manufacturer or supplier of chemical substances or mixtures shall label them in accordance with the N.J. Worker and Community Right to Know Law (N.J.S.A. 34:5A-1 et seq., and N.J.A.C 8:59-2 et seq.,). Containers that the law and rules require to be labeled shall show the Chemical Abstracts Service number of all the components and the chemical name. Further, all applicable Material Safety Data Sheets (MSDS) - hazardous substance fact sheet - must be furnished.

☒ F. PREVAILING WAGE ACT

Pursuant to N.J.S.A. 34:11-56.25 et seq., contractors on projects for public work shall adhere to all requirements of the New Jersey Prevailing Wage Act. The contractor shall be required to submit a certified payroll record to the City within ten (10) days of the payment of the wages. The contractor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The contractor shall submit said certified payrolls in the form set forth in N.J.A.C. 12:60-6.1(c). It is the contractor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the New Jersey Department of Labor and Workforce Development, Division of Workplace Standards. Bidders are cautioned to take into consideration statutory legal requirements, particularly, the payment of prevailing wages. It is Bidder's sole responsibility for determining the correct labor classification(s) and paying the correct and proper wage and benefits and it is imperative that the Contractor familiarize itself with the current wage and benefit rates before submitting bids based on these specifications. **NOTE: Additional information and current wage rates are available at:** http://lwd.state.nj.us/labor/wagehour/wagehour_index.html.

☒ G. THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT

N.J.S.A. 34:11-56.48 et seq. requires that a general or prime contractor and any listed subcontractors named in the contractor's bid proposal shall possess a certificate *at the time the bid proposal is submitted.* After bid proposals are received and prior to award of contract, the successful contractor shall submit a copy of the contractor's certification along with those of all listed subcontractors. All non-listed subcontractors and lower tier sub-subcontractors shall be registered prior to starting work on the project. It is the general contractor's responsibility that all non-listed sub-contractors at any tier have their certificate prior to starting work on the job.

Under the law a "contractor" is "a person, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof who enters into a contract" which is subject to the provisions of the New Jersey Prevailing Wage Act [N.J.S.A. 34:11-56.25, et seq.] It applies to contractors based in New Jersey or in another state.

The law defines "public works projects" as contracts for "public work" as defined in the Prevailing Wage statute [N.J.S.A. 34:11-56.26(5)]. The term means:

- "Construction, reconstruction, demolition, alteration, or repair work, or maintenance work, including painting and decorating, done under contract and paid for in whole or in part out of the funds of a public body, except work performed under a rehabilitation program.

- "Public work" shall also mean construction, reconstruction, demolition, alteration, or repair work, done on any property or premises, whether or not the work is paid for from public funds…"
- "Maintenance work" means the repair of existing facilities when the size, type or extent of such facilities is not thereby changed or increased. While "maintenance" includes painting and decorating and is covered under the law, it does not include work such as routine landscape maintenance or janitorial services.

To register, a contractor must provide the State Department of Labor with a full and accurately completed application form. The form is available online at **http://lwd.state.nj.us/labor/wagehour/regperm/pw_cont_reg.html**

N.J.S.A. 34:11-56.55 specifically prohibits accepting applications for registration as a substitute for a certificate of registration.

☐ H. NON-COLLUSION AFFIDAVIT **(Not Applicable)**

The Affidavit shall be properly executed and submitted with the bid proposal.

I. PAY TO PLAY

Starting in January, 2007, business entities are advised of their responsibility to file an annual disclosure statement of political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if they receive contracts in excess of $50,000 from public entities in a calendar year.

Business entities are responsible for determining if filing is necessary. Additional information on this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us.

J. NJ ONE CALL

By presenting a bid, contractor declares that he is aware of and, if required, will comply with the requirements of the "Underground Facility Protection Act (Public Law 1994, Chapter 118)" prior to commencing any intended excavation. The telephone number to call is 1-800-272-1000. The successful bidder will be required to show compliance with the requirement by submitting to the appropriate project coordinator the confirmation number obtained from ONE-CALL before any excavation is undertaken.

VIII. METHOD OF CONTRACT AWARD

A. The length of the contract shall be stated in the technical specifications. Pursuant to requirements of N.J.A.C. 5:30-5.1 et seq., any contract resulting from this bid shall be subject to the availability and appropriation of sufficient funds annually. Please see Section X, Termination of Contract, Sub-section E, for additional information.

B. If the award is to be made on the basis of a base bid only, it shall be made to that responsible bidder submitting the lowest base bid.

C. If the award is to be made on the basis of a combination of a base bid with selected options, it shall be made to that responsible bidder submitting the lowest net bid.

D. The City may also elect to award the contract on the basis of unit prices.

E. The form of contract shall be submitted by the City to the successful bidder. Terms of the specifications/bid package prevail. Bidder exceptions must be formally accepted by the city.

F. **Choice of Law:** The agreement with the successful bidder shall be construed in accordance with the laws of the State of New Jersey. In the event of litigation or other legal proceedings commenced to enforce the terms of the agreement, the venue of such litigation shall be the Superior Court of New Jersey, Cumberland County.

IX. CAUSES FOR REJECTING BIDS

Bids may be rejected for any of the following reasons:

A. All bids pursuant to N.J.S.A. 40A:11-13.2;

B. If more than one bid is received from an individual, firm or partnership, corporation or association under the same name;

C. Multiple bids from an agent representing competing bidders;

D. The bid is inappropriately unbalanced;

E. The bidder is determined to possess, pursuant to N.J.S.A. 40A:11-4b, Prior Negative Experience; or,

F. If the successful bidder fails to enter into a contract within 21 days, Sundays and holidays excepted, or as otherwise agreed upon by the parties to the contract. In this case at its option, the City may accept the bid of the next lowest responsible bidder. (N.J.S.A. 40A:11-24b)

X. TERMINATION OF CONTRACT

A. If, through any cause, the contractor shall fail to fulfill in a timely and proper manner obligations under the contract or if the contractor shall violate any of the requirements of the contract, the City shall there upon have the right to terminate the contract by giving written notice to the contractor of such termination and specifying the effective date of termination. Such termination shall relieve the City of any obligation for balances to the contractor of any sum or sums set forth in the contract. City will pay only for goods and services accepted prior to termination.

B. Notwithstanding the above, the contractor shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of the contract by the contractor and the City may withhold any payments to the contractor for the purpose of compensation until such time as the exact amount of the damage due the City from the contractor is determined.

C. The contractor agrees to indemnify and hold the City harmless from any liability to subcontractors/suppliers concerning payment for work performed or goods supplied arising out of the lawful termination of the contract by the City under this provision.

D. In case of default by the contractor, the City may procure the goods or services from other sources and hold the contractor responsible for any excess cost.

E. Continuation of the terms of the contract beyond the fiscal year is contingent on availability of funds in the following year's budget. In the event of unavailability of such funds, the City reserves the right to cancel the contract.

F. ACQUISITION, MERGER, SALE AND/OR TRANSFER OF BUSINESS, ETC.

It is understood by all parties that if, during the life of the contract, the contractor disposes of his/her business concern by acquisition, merger, sale and or/transfer or by any means convey his/her interest(s) to another party, all obligations are transferred to that new party. In this event, the new City(s) will be required to submit all documentation/legal instruments that were required in the original bid/contract. Any change shall be approved by the City.

G. The contractor will not assign any interest in the contract and shall not transfer any interest in the same without the prior written consent of the City.

H. The City may terminate the contract for convenience by providing 60 calendar days advanced notice to the contractor.

XI. PAYMENT

A. No payment will be made unless duly authorized by the City's authorized representative and accompanied by proper documentation.

B. Payment will be made in accordance with the City's policy and procedures.

XII. W-9

A. Bidder shall complete W-9 form and submit to the City of Vineland Division of Purchasing prior to contract award. This form is available at the following link: http://www.irs.gov/pub/irs-pdf/fw9.pdf?portlet=3

XIII. Contract Records

As per N.J.A.C. 17:44-2.2 Vendor shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

NEW JERSEY ANTI-DISCRIMINATION PROVISIONS
NJ.S.A.10:2-1 ET SEQ.

Pursuant to NJ.S.A. 10:2-1, if awarded a contract, the contractor agrees that:

A. In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;

B. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

C. There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of $50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and

D. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

Provisions Concerning Changed Conditions in Construction Contracts (N.J.S.A. 40A:11-16.7)

(1) If the contractor encounters differing site conditions during the progress of the work of the contract, the contractor shall promptly notify the contracting unit in writing of the specific differing site conditions encountered before the site is further disturbed and before any additional work is performed in the impacted area.

(2) Upon receipt of a differing site conditions notice in accordance with paragraph (1) of this subsection, or upon the contracting unit otherwise learning of differing site conditions, the contracting unit shall promptly undertake an investigation to determine whether differing site conditions are present.

(3) If the contracting unit determines different site conditions that may result in additional costs or delays exist, the contracting unit shall provide prompt written notice to the contractor containing directions on how to proceed.

(4) (a) The contracting unit shall make a fair and equitable adjustment to the contract price and contract completion date for increased costs and delays resulting from the agreed upon differing site conditions encountered by the contractor.

(b) If both parties agree that the contracting unit's investigation and directions decrease the contractor's costs or time of performance, the contracting unit shall be entitled to a fair and equitable downward adjustment of the contract price or time of performance.

(c) If the contracting unit determines that there are no differing site conditions present that would result in additional costs or delays, the contracting unit shall so advise the contractor, in writing, and the contractor shall resume performance of the contract, and shall be entitled to pursue a differing site conditions claim against the contracting unit for additional compensation or time attributable to the alleged differing site conditions.

(5) Execution of the contract by the contractor shall constitute a representation that the contractor has visited the site and has become generally familiar with the local conditions under which the work is to be performed.

(6) As used in this subsection, "differing site conditions" mean physical conditions at the contract work site that are subsurface or otherwise concealed and which differ materially from those indicated in the contract documents or are of such an unusual nature that the conditions differ materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the contract.

b. A contract subject to this section shall include the following suspension of work provisions:

(1) The contracting unit shall provide written notice to the contractor in advance of any suspension of work lasting more than 10 calendar days of the performance of all or any portion of the work of the contract.

(2) If the performance of all or any portion of the work of the contract is suspended by the contracting unit for more than 10 calendar days due to no fault of the contractor or as a consequence of an occurrence beyond the contracting unit's control, the contractor shall be entitled to compensation for any resultant delay to the project completion or additional contractor expenses, and to an extension of time, provided that, to the extent feasible, the contractor, within 10 calendar days following the conclusion of the suspension, notifies the contracting unit, in writing, of the nature and extent of the suspension of work. The notice shall include available supporting information, which information may thereafter be supplemented by the contractor as needed and as may be reasonably requested by the contracting unit.

Whenever a work suspension exceeds 60 days, upon seven days' written notice, either party shall have the option to terminate the contract for cause and to be fairly and equitably compensated therefor.

(3) Upon receipt of the contractor's suspension of work notice in accordance with paragraph (2) of this subsection, the contracting unit shall promptly evaluate the contractor's notice and promptly advise the contractor of its determination on how to proceed in writing.

(4) (a) If the contracting unit determines that the contractor is entitled to additional compensation or time, the contracting unit shall make a fair and equitable upward adjustment to the contract price and contract completion date.

(b) If the contracting unit determines that the contractor is not entitled to additional compensation or time, the contractor shall proceed with the performance of the contract work, and shall be entitled to pursue a suspension of work claim against the contracting unit for additional compensation or time attributable to the suspension.

(5) Failure of the contractor to provide timely notice of a suspension of work shall result in a waiver of a claim if the contracting unit can prove by clear and convincing evidence that the lack of notice or delayed notice by the contractor actually prejudiced the contracting unit's ability to adequately investigate and defend against the claim.

c. A contract subject to this section shall include the following change in character of work provisions:

(1) If the contractor believes that a change directive by the contracting unit results in a material change to the contract work, the contractor shall so notify the contracting unit in writing. The contractor shall continue to perform all work on the project that is not the subject of the notice.

(2) Upon receipt of the contractor's change in character notice in accordance with paragraph (1) of this subsection, the contracting unit shall promptly evaluate the contractor's notice and promptly advise the contractor of its determination on how to proceed in writing.

(3) (a) If the contracting unit determines that a change to the contractor's work caused or directed by the contracting unit materially changes the character of any aspect of the contract work, the contracting unit shall make a fair and equitable upward adjustment to the contract price and contract completion date. The basis for any such price adjustment shall be the difference between the cost of performance of the work as planned at the time of contracting and the actual cost of such work as a result of its change in character, or as otherwise mutually agreed upon by the contractor and the contracting unit prior to the contractor performing the subject work.

(b) If the contracting unit determines that the contractor is not entitled to additional compensation or time, the contractor shall continue the performance of all contract work, and shall be entitled to pursue a claim against the contracting unit for additional compensation or time attributable to the alleged material change.

(4) As used in this subsection, "material change" means a character change which increases or decreases the contractor's cost of performing the work, increases or decreases the amount of time by which the contractor completes the work in relation to the contractually required completion date, or both.

d. A contract subject to this section shall include the following change in quantity provisions:

(1) The contracting unit may increase or decrease the quantity of work to be performed by the contractor.

(2) (a) If the quantity of a pay item is cumulatively increased or decreased by 20 percent or less from the bid proposal quantity, the quantity change shall be considered a minor change in quantity.

(b) If the quantity of a pay item is increased or decreased by more than 20 percent from the bid proposal quantity, the quantity change shall be considered a major change in quantity.

(3) For any minor change in quantity, the contracting unit shall make payment for the quantity of the pay item performed at the bid price for the pay item.

(4) (a) For a major increase in quantity, the contracting unit or contractor may request to renegotiate the price for the quantity in excess of 120 percent of the bid proposal quantity. If a mutual agreement cannot be reached on a negotiated price for a major quantity increase, the contracting unit shall pay the actual costs plus an additional 10 percent for overhead and an additional 10 percent for profit, unless otherwise specified in the original bid.

(b) For a major decrease in quantity, the contracting unit or contractor may request to renegotiate the price for the quantity of work performed. If a mutual agreement cannot be reached on a negotiated price for a major quantity decrease, the contracting unit shall pay the actual costs plus an additional 10 percent for overhead and an additional 10 percent for profit, unless otherwise specified in the original bid; provided, however, that the contracting unit shall not make a payment in an amount that exceeds 80 percent of the value of the bid price multiplied by the bid proposal quantity.

(5) As used in this subsection, the term "bid proposal quantity" means the quantity indicated in the bid proposal less the quantities designated in the project plans as "if and where directed."

City of Vineland

Revised Contract Language for BRC Compliance

Goods and Services Contracts (including Purchase Orders)

*Construction Contracts (including Public Works related Purchase Orders)

N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that knowingly provide goods or perform services for a contractor fulfilling this contract:

1. The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
2. Subcontractors through all tiers of a project must provide written notice to their subcontractors and suppliers to submit proof of business registration and subcontractors shall collect such proofs of business registration and maintain them on file;
3. Prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors and suppliers or attest that none was used;
4. During the term of this contract, the contractor and its affiliates shall collect and remit and shall notify all subcontractors and their affiliates that they must collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sale of tangible personal property delivered into this State.

Pursuant to J.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000, for each proof of business registration not properly provided under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-9292.

NEW JERSEY BUSINESS REGISTRATION

Pursuant to P.L. 2004, c.57, all consultants (both in-state and out-of-state) must obtain a Business Registration Certificate (BRC) from the New Jersey Department of the Treasury, Division of Revenue prior to conducting business with the NJTPA. A consultant or sub-consultant who fails to submit a copy of a valid BRC in accordance with the statue will be held liable for monetary penalties in accordance with N.J.S.A. 54:49-4.1. Questions regarding how to obtain a BRC can be directed to the New Jersey Division of Revenue at (609) 292-1730. The business registration form (Form NJ-REG) can be found online at:

http://www.state.nj.us/treasury/revenue/busregcert.shtml or

http://www.state.nj.us/treasury/revenue/gettingregistered.shtml

Sample New Jersey Registration Certificates:

STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE

DEPARTMENT OF TREASURY/
DIVISION OF REVENUE
PO BOX 252
TRENTON, N J 08646-0252

TAXPAYER NAME: TRADE NAME:

TAXPAYER IDENTIFICATION#: SEQUENCE NUMBER:

ADDRESS: ISSUANCE DATE:

EFFECTIVE DATE:

Acting Director

FORM-BRC(08-01) This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.

STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE

Taxpayer Name:	TAX REG TEST ACCOUNT
Trade Name:	
Address:	847 ROEBLING AVE TRENTON, NJ 08611
Certificate Number:	1093907
Date of Issuance:	October 14, 2004

For Office Use Only:

20041014112823533

THIS PROJECT REQUIRES A CERTIFICATE FOR PUBLIC WORKS CONTRACTOR REGISTRATION FOR GENERAL CONTRACTORS AND SUBCONTRACTORS IN ACCORDANCE WITH PL 1999 C. 238

For questions or information about PL 1999, C.238, please call Contractor Registration Unit, New Jersey Department of Labor, Division of Wage and Hour Compliance, (609) 292-9464 or email: contreg@dol.state.nj.us

The website is: http://www.nj.gov/labor/wageandhour/registration-permits/register/publicworksregistration.shtml

CERTIFICATE MUST BE SUBMITTED TO THE CITY OF VINELAND PURCHASING DEPARTMENT PRIOR TO CONTRACT AWARD. CERTIFICATES MUST ALSO BE SUBMITTED FOR ANY/ALL OF THE COMPANIES/INDIVIDUALS LISTED ON THE SUBCONTRACTORS LIST AS THE PRIME SUBCONTRACTORS (AS REQUIRED BY N.J.S.A. 40A:11-16)

The City of Vineland cannot accept applications. We cannot award a contract if the certificate was not issued to the contractor/subcontractor prior to submission of the bid.

Certificate Number

Registration Date

State of New Jersey

Department of Labor

Division of Wage and Hour Compliance

Public Works Contractor Registration Act

Pursuant to Public Law 1999 Chapter 238, the Public Works Contractor Registration Act, this certificate of registration, for purposes of bidding on and engaging in public work is issued to

AAA

AUT

This certificate may not be transferred or assigned and may be revoked for cause by the Commissioner of Labor

ROBERT G. ASAKIL, Commissioner
Department of Labor

NON-TRANSFERABLE

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127) and N.J.A.C. 17:27-1.1 et seq.

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Dept. of WD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contactor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of(C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further , however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable

collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the con tractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

AMERICANS WITH DISABILITIES ACT OF 1990

Equal Opportunity for Individuals with Disability

The contractor and the City of Vineland, (hereafter "City") do hereby agree that the provisions of Title 11 of the Americans with Disabilities Act of 1990 (the "Act") *(42 U.S.C. SJ 21 01* et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the City pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the City in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the City, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the City's grievance procedure, the contractor agrees to abide by any decision of the City which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the City, or if the City incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The City shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, if any action or administrative proceeding is brought against the City or any of its agents, servants, and employees, the City shall expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the City or its representatives.

It is expressly agreed and understood that any approval by the City of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the City pursuant to this paragraph.

It is further agreed and understood that the City assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the City from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

Permission for Bidder to Withdraw a Bid Due to a Mistake in Certain Circumstances

(N.J.S.A. 40A:11-23.3)

N.J.S.A. 40A:11-23.3 authorizes a bidder to request withdrawal of a public works bid due to a mistake on the part of the bidder. A mistake is defined by N.J.S.A. 40A:11-2(42) as a clerical error that is an **unintentional and substantial computational error** or **an unintentional omission of a substantial quantity of labor, material, or both, from the final bid computation.**

A bidder claiming a mistake under N.J.S.A. 40A:11-23.3 must submit a request for withdrawal, **in writing,** by certified or registered mail to Miguel A. Mercado Purchasing Agent, City of Vineland, 640 E. Wood Street, P.O. Box 1508, Vineland, NJ 08361-1508. The bidder must request withdrawal of a bid due to a mistake, as defined by the law, within five business days after the receipt and opening of the bids. Since the bid withdrawal request shall be effective as of the postmark of the certified or registered mailing, Miguel A. Mercado Purchasing Agent, may contact all bidders, after bids are opened, to ascertain if any bidders wish to, or already have exercised a request to withdraw their bid pursuant to N.J.S.A. 40A:11-23.3.

A bidder's request to withdraw the bid **shall** contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written information shall be reviewed and evaluated by the City of Vineland's designated staff pursuant to the statutory criteria of N.J.S.A. 40A:11-23.3.

The City of Vineland will not consider any written request for a bid withdrawal for a mistake, as defined by N.J.S.A. 40A:11-2(42), by a bidder in the preparation of a bid proposal unless the postmark of the certified or registered mailing is within the five business days following the opening of bids.

LOWEST BIDDER PREVAILING WAGE CERTIFICATION

In the case of a Bidder making the lowest bid for this contract by at least ten percent (10%) under the amount of the next lowest bidder, they shall be required to certify to the City of Vineland prior to the award of a contract that the prevailing wage rates required pursuant to the Prevailing Wage Act shall be paid in performing the work under the contract. In the event that the Bidder does not provide the certification prior to the award of the contract, the City of Vineland shall award the contract to the next lowest responsible and responsive bidder.

Specifications for the:

Building Alterations
to the
Vineland Municipal Electric Utility
in
Vineland, New Jersey

For the

Vineland Municipal Electric Utility
415 North West Avenue
Vineland, New Jersey 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane, Suite 204
Cherry Hill, New Jersey 08034

Project No. 1344

March 2026

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Project:

Name:	Alterations to Vineland Municipal Electric Utility
Location:	415 N. West Avenue, Vineland, New Jersey
Project No.:	1344

Owner:

Name:	City of Vineland Municipal Electric Utility.	
Address:	640 E. Wood Street, PO Box 1508, Vineland, New Jersey 08360	
Representative:	Bruce Farrell, Project Executive	
Phone:	(856)-424-8888	Fax: (856)-424-1688
Email:	bfarrell@newroadcm.com	

Architect:

Name:	Joseph F. McKernan Jr., Architect & Associates, LLC	
Address:	100 Dobbs Lane, Suite 204, Cherry Hill, New Jersey 08034	
Representative.:	Mr. Otanie Green, Project Manager	
Phone:	(856) 616-2960	Fax: (856) 616-2963
Email:	ogreen@mckernanarchitects.com	

Structural Engineer:

Name:	Michael A. Beach & Associates	
Address:	161 Gaither Drive, Suite 102, Mt. Laurel, New Jersey 08054	
Representative:	Mr. Timothy Jennings, PE, Project Manager	
Phone:	(856) 273-1909	Fax: (856) 273-1480
Email:	timj@mabeachassociates.com	

Mechanical / Electrical Engineer:

Name:	Holstein White, Inc.	
Address:	3800 Horizon Blvd., Suite 503, Trevose, Pennsylvania 19053	
Representative.:	Mr. Jamie Boles, PE, Project Manager	
Phone:	(215) 322-7711	Fax: (215) 322-7709
Email:	jboles@holsteinwhite.com	

AIA® Document A701® – 2018

Instructions to Bidders

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

Sample

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

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

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ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

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

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

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

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ARTICLE 1 DEFINITIONS

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

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

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

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

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

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

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

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

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

ARTICLE 2 BIDDER'S REPRESENTATIONS

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

.1 the Bidder has read and understands the Bidding Documents;

.2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;

.3 the Bid complies with the Bidding Documents;

.4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;

.5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and

.6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 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.

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

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

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

§ 3.2 Modification or Interpretation of Bidding Documents

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

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect 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.)

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

§ 3.3 Substitutions

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

§ 3.3.2 Substitution Process

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

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

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

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

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

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

§ 3.4 Addenda

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

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

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

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

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

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

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

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

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

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

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

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

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

§ 4.2 Bid Security

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

§ 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, beginningdays 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:

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

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

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

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

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

§ 4.4 Modification or Withdrawal of Bid

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

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

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

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

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

§ 5.2 Rejection of Bids

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

§ 5.3 Acceptance of Bid (Award)

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

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

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement,

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unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

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

§ 6.3 Submittals

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

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

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

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

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

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

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

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

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

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

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

§ 7.2 Time of Delivery and Form of Bonds

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

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

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

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

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(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.
(Insert the complete AIA Document number, including year, and Document title.)

.4 Building Information Modeling Exhibit, if completed:

.5 Drawings

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

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

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SUPPLEMENTARY INSTRUCTION TO BIDDERS

The Instruction to Bidders of the American Institute of Architects, AIA-A701, 2018 Edition; hereinbefore attached as follows, inclusive is hereby supplemented amended or changed for this project as follows:

ARTICLE 3 – BIDDING DOCUMENTS

3.2 MODIFICATIONS OR INTERPRETATIONS OF BIDDING DOCUMENTS

3.2.2 Change the received by "Architect" to read, received by Miguel A. Mercado, Purchasing Agent by email at purchasingagent@vinelandcity.org

3.2.4 PLANS AND SPECIFICATIONS

The project shall be performed in accordance with the requirements of the plans and specifications which are intended to complement and supplement each other. Any work required by either of them and not by the other shall be performed as if denoted both ways. Any conflict between drawings and specifications or drawings themselves or specifications themselves, or addenda or other contract documents not fully resolved by written addendum shall be bid on the more expensive material and method of work. It shall be impressed upon the bidder to attempt to contact the Architects for all interpretations as promptly as possible during the bidding period.

3.4 ADDENDA

3.4.3 change "four (4) days" to "seven (7) days" prior to receipt of bids.

ARTICLE 4 – BIDDING PROCEDURE

4.2 SUBMISSION OF BIDS

4.3.5 In accordance with Notice of Bids, proposals will be received for the performance of the project, on the items stated in the Form of Proposal for the project. The price bid shall cover all cost of any nature growing out of the work. In explanation but not in limitation thereof, these costs shall include the cost of all work, labor, material, equipment, transportation and all else necessary to perform and complete the project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the project, and any additional expenses for unforeseen defective work or materials. Conditions, limitations or provisions attached by the bidder to the Proposal will not be accepted.

4.3.6 Bidders are cautioned to acquaint themselves with any requirements therein necessitating installation work by one Contractor of materials or equipment furnished by another Contractor as required to complete the entire project. Bidders shall also note all cases where it is specified that all work or material or both are to be omitted by one contractor and are to be furnished by another identified therein.

4.3.7 Form of Proposal: Proposals shall be submitted on the Form of Proposal furnished by the Architects properly filled out and shall be duly executed. When the Proposal is made by any individual, his post office shall be stated, and he shall sign the Proposal; when made by a firm or partnership, its name and post office address shall be stated and the Proposal shall be signed by one or more of the partners; when made by a corporation, its name and the principal post office shall be stated, and the Proposal shall be signed by an authorized official of the corporation. Before award is made to a bidder not a resident of the State of New Jersey, such bidder shall designate a proper agent on the State of New Jersey on whom service can be made in event of litigation.

4.3.8 Payment and Performance Bond: The Contractors shall submit with their bid a Certificate of Surety from a bonding company, licensed in New Jersey, stating that they will provide a 100% Payment and Performance Bond for the Contractor.

4.3.9 Corporate-Ownership Disclosure: The Contractors shall submit with their bid a Form of Corporate-Ownership Disclosure as follows;

1. No corporation or partnership shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies, the cost of which is to be paid with or out of any public funds, by the State of any county, municipality or school district, or by any authority, board or commission which exercises governmental functions, unless prior to the receipt of the bid or accompanying the bid, of said corporation or said partnership, there is submitted a statement setting forth the names and addresses of all stockholders in the corporation of partnership who own 10% or more of its stock, of any class, or of all individual partners in the partnership who own a 10% or greater interest therein, as the case may be. If one or more such stockholder or partner is itself a corporation or partnership, the stockholders holding 10% or more of that corporation's stock, or the individual partners owning 10% or greater interest in that partnership, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, exceeding the 10% ownership criteria established in this act, has been listed.

4.3.10 Business Registration: Pursuant to P.L.2004,c57, proof of a valid **State of New Jersey Business Registration Certificate/License for the Contractor and any subcontractors must be Submitted** with the Contract. Failure to provide a copy of a **valid** Certificate with your Contract will result in rejection of the bid as non-responsive to the bid requirements. This registration is separate from the Public Works Contractor Registration Act.

1. N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that **knowingly** provide goods or perform services for a contractor fulfilling this contract:

   a. the contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
   b. subcontractors through all tiers of the project must provide written notice to their subcontractors and suppliers to submit proof of business registration and subcontractors shall collect such proofs of business registration and maintain them on file;
   c. prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors and suppliers or attest that none was used; and,
   d. during the term of this contract, the contractor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit, to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State.

2. A contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration copy not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements are available by calling 609-292-9292. (State of NJ)

ARTICLE 5 – CONSIDERATION OF BIDS

5.3 ACCEPTANCE OF BID (AWARD)

5.3.3 Proposals shall be in effect for a period of sixty (60) days from the date bids are opened. Owner shall have the right to award any or all contracts during that period of time. The time may be extended only in accordance with P.L. 1971. C.198, N.J.S.A. 18A:18A-36.

5.3.4 Award, if made, will be to the lowest responsible bidder whose proposal is complete in all respects with the requirements stated herein. Owner reserves the right to reject any or all bids. Any change or omission from the required proposal will be the basis for rejecting the proposal.

5.3.5 The Owner reserves the right to reject, in good faith, any bid, if the evidence submitted by, or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work within the specified time.

ARTICLE 8 – FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

8.1 FORM TO BE USED

8.1.1 Change to read: Form of Agreement shall be in the Owner and Contractor Agreement as bound in this specification.

ARTICLE 9 – SUPPLEMENTARY INSTRUCTIONS

9.1. EQUAL EMPLOYMENT OPPORTUNITY

9.1.1 The Owner states that they will not discriminate against any bidder on the basis of race, religion, sex, national origin, length of hair, style of dress, or social status.

9.1.2 During the performance of this contract, the contractor agrees as follows:

1. The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Except with respect to affectional or sexual orientation, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Such action shall include, but not be limited to the following: employment, up-grading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause;

2. The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex;

3. The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to **N.J.S.A. 10:5-31 et seq**., as amended and supplemented from time to time and the Americans with Disabilities Act.

5. When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the applicable employment goal prescribed by **N.J.A.C. 17:27-7.3**; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the applicable employment goal established in accordance with **N.J.A.C. 17:27-7.3**. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

   a. If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to attempt to hire or schedule minority and women workers directly, consistent with the applicable employment goal. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with the applicable employment goal, the contractor or subcontractor agrees to be prepared to hire or schedule minority and women workers directly, consistent with the applicable employment goal, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines or is so notified by the Division that the union is not referring minority and women workers consistent with the applicable employment goal.

   b. If the hiring or scheduling of a workforce consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions consistent with the applicable county employment goals:

      (l) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

      (2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

      (3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

      (4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and

Employment Service and other approved referral sources in the area until such time as the workforce is consistent with the employment goal;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and women employees remain on the site consistent with the employment goal; and to employ any minority and women workers laid off by the contractor on any other construction site on which its workforce composition is not consistent with an employment goal established pursuant to rules implementing **N.J.S.A. 10:5-31 et. seq.;**

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall determine the qualifications of such individuals and if the contractor's or subcontractor's workforce in each construction trade is not consistent with the applicable employment goal, it shall hire or schedule those individuals who satisfy appropriate qualification standards. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(ii) If the contractor's or subcontractor's workforce is consistent with the applicable employment goal, the name of any interested women or minority individual shall be maintained on a waiting list for the first consideration, in the event the contractor's or subcontractor's workforce is no longer consistent with the applicable employment goal.

(iii) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

c. The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage

significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27:7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

d. The contractor and its subcontractors shall furnish such reports or other documents to the Division of Contract Compliance & EEO as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Contract Compliance & EEO for conducting a compliance investigation pursuant to **Subchapter l0 of the Administrative Code (NJAC 17:27).**

9.2.1 Each contractor shall submit and Initial Manning Report (AA201) within seven (7) days of award of contract or notification of intent to award by the Owner.

9.3 NON-COLLUSION

9.3.1 All bidders shall include a "Non-Collusion Affidavit" with their bid.

9.4 SCOPE OF PROPOSALS

9.4.1 The work under this contract or contracts include all work within the areas bounded by contract limit lines on the drawings, together with work beyond contract limit lines where shown on the drawings, specifications and other contract documents pertinent to the project available from the Architect, during the period.

9.4.2 Sealed Bids will be received for the following:

Division I - General Construction; to include Mechanical ,Electrical and Plumbing.

9.4.3 All bids will be submitted on one standard proposal form provided by the Architect (or and exact duplicate) and shall be in one sealed envelope from each Contractor with the name of the Contractor and division of work bid upon marked in the outside.

9.4.4 Refer to each Division of the Specification and Drawings and state amount of add or deduct from the Base Bid for the alternates listed there.

END OF SECTION

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

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

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

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consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

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

§ 1.6 Notice

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

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

§ 1.7 Digital Data Use and Transmission

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

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§ 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 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.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

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

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

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

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

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assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

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§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

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

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

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

§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

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§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

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

§ 3.7.4 Concealed or Unknown Conditions

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

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

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

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

§ 3.10 Contractor's Construction and Submittal Schedules

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

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the

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Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

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

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

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

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

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

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

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

ARTICLE 4 ARCHITECT
§ 4.1 General
§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

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Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

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

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

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

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

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

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

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

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

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and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

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

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

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

§ 5.3 Subcontractual Relations

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

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prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

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

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

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

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

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

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

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

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

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

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

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

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

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

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

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

§ 7.4 Minor Changes in the Work

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

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.3 Delays and Extensions of Time

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

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

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

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

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unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

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

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

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§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.

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

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

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

§ 9.6 Progress Payments

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

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

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

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

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

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

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

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

§ 9.7 Failure of Payment

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

§ 9.8 Substantial Completion

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

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

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

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

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

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§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

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

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

§ 9.10 Final Completion and Final Payment

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

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

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

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

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

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

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

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

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

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

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

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§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

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

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

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

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

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

§ 10.4 Emergencies

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

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ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

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

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

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

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

§ 11.2 Owner's Insurance

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

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

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

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§ 11.3 Waivers of Subrogation

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

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

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

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

§11.5 Adjustment and Settlement of Insured Loss

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

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the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

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

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

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

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§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

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

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

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

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

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

§ 13.5 Interest

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

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the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

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

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

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

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

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

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

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

§ 15.1.2 Time Limits on Claims

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

§ 15.1.3 Notice of Claims

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

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

§ 15.1.4 Continuing Contract Performance

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

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

§ 15.1.5 Claims for Additional Cost

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

§ 15.1.6 Claims for Additional Time

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

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

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

§ 15.2 Initial Decision

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

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

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Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

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

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

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

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

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

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

§ 15.3 Mediation

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

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

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

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§ 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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SUPPLEMENTARY GENERAL CONDITIONS

The General Conditions of the Contract for the Construction of Buildings Standard Form of the American Institute of Architects, AIA-A-201-Latest Edition, hereinbefore attached as Pages 1 to 39 inclusive, is hereby supplemented, amended or changed for this Project as follows:

ARTICLE 1 – GENERAL PROVISIONS

1.2 Execution, Correlation, and Intent

1.2.1 Add the Following: Failure to Execute Contract – Failure to comply with any of the requirements of these specifications; to execute the contract within twenty-one (21) days after formal notification, or to furnish security as required, shall be just cause for the annulment of the award, the amount of the proposal guarantee shall become the property of the Owner, not as a penalty, but as liquidated damages. Award may be to the next qualified bidder or the work re-advertised or handled as the Owner may elect.

1.2.5 Add the following: Source of Supply and Quality of Materials: Wherever on the Plans or in the detailed Specifications, a particular brand or make of material, device or equipment is shown or specified, such material, device, or equipment is to be regarded merely as a standard. Any other brand or make, which in the opinion of the Architect is equal to that specified, will be accepted, conditional to Architect's written approval to the Contractor's written request for substitution. Such request shall be made through the Contractor, not from the supplier or Subcontractor.

ARTICLE 3 – CONTRACTOR

3.1 General

3.1.1 Add the following at the end of this Article: Wherever the words "General Contractor" are used, it shall mean the "Contractor for General Construction". Whenever the work "Contractors" is used, it shall mean each and every Contractor engaged on the building. On multiple contract work, the work "Contractor" shall refer to a prime Contractor (i.e., one who signs a direct contract with the Owner).

3.3 Supervision and Construction Procedures

3.3.2 Add the following: There shall be no drinking of alcoholic beverages, etc., allowed on the premises. No person shall be allowed to remain on the job site under the obvious influence of alcohol or the like.

3.3.4 Add: Measurements – Field – Before ordering any material or doing any work, each Contractor or Subcontractor shall verify all measurements at the building and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on the drawings: any difference which may be found, shall be submitted to the Architect for consideration and clarification before proceeding with the work.

3.3.5 Add: Laying out of the Building – General Contractor shall employ an experienced and competent professional land surveyor, cause him to establish a permanent bench or benches to which easy access may be had during the progress of the work to determine all lines and grades for the work, and to verify same from time to time during the progress of the work. This Contractor shall use the land surveyor to determine the building lines and the exact location of the building.

3.5 WARRANTY – Add to this article: No work by any contractor shall be performed so as to void any warranties held by the Owner or another contractor.

3.6 Taxes – Add to this article:

3.6.2 New Jersey Sales Tax – Contractors and Subcontractors purchasing materials to be used on public projects will NOT be subject to New Jersey Sales Tax. Contractor shall file an exemption certificate from the State of New Jersey.

3.8 Allowances

3.8.2.4 Add: Surplus in General Allowance shall be refunded to the Owner at the completion of the work.

3.8.3 Add: Surplus from allowances may be used by the Contractor, when approved in writing by the Architect, for labor and materials required for extra work. No additional overhead shall be allowed on monies spent out of this "general allowance".

3.9 Superintendent

3.9.1 Add the following: The Contractor for General Construction shall be charged with the duty of coordinating the work of the several contractors involved. He shall advise them when the work at the site will be ready for their installations and cooperate with each to expedite the work.

3.10 Contractor's Construction Schedules

3.10.4 Add: Within ten (10) calendar days after the award of the contract, a progress schedule shall be submitted by the General Contractor, after conference with all other contractors, and shall be a detailed construction progress schedule, and shall be prepared in the form of a bar diagram drawn to a suitable scale to indicate both estimated and actual progress at any one time of each division of the work and part thereof.

3.10.5 Add: After the progress schedule has been submitted to the Architect and been approved, the General and other contractors shall furnish sufficient forces, construction plant and equipment to insure the prosecution and completion of the work in accordance with the approved progress schedule.

3.10.6 Add: The General Contractor shall indicate on the progress schedule diagram the rate of progress of all contractors, and shall promptly deliver to the Architects two (2) black and white prints of the same, whenever requested by the Owner or Architect.

3.12 Shop drawings, Product Data, and Samples

3.12.7 Add the following: Architect assumes no responsibility for field dimensions.

3.12.8 Add the following: In reviewing shop drawings, the Architect assumes no responsibility for quantities, or for dimensional errors that may be present in the drawings. Final responsibility for dimensional assemblies to be installed in the building shall belong to the Contractor providing and installing same.

3.14 Cutting and Patching

3.14.2 Add: Consult the various divisions for specific requirements. Generally all prime contractors shall either erect their work ahead of the General Contractor, or shall provide reasonably in advance of a set of shop drawings indicating the required location and sized of all openings, sleeves and chaises required. The General Contractor shall place all sleeves, anchors, and bearing plates supplies to him according to these drawings.

ARTICLE 4 – ADMINISTRATION OF THE CONTRACT

4.2 Architect's Administration of the Contract

4.2.3 Add: The Architect will not be expected to expedite the job for the Contractor.

4.2.10 Add the following: If a full-time project representative is provided by the Architect or the Owner, he shall be guided and limited in his authorities, duties, and responsibilities by the articles set forth in AIA Document B-352-1970 Ed, "Duties, Responsibilities and Limitations of Authority of Full-Time Project Representative".

4.2.14 Add: The Architect shall be the sole interpreter of the plans and specifications and the Contractor's performance therewith. It is the intent of these plans and specifications to provide materials of a quality consistent with the average of those provided under similar circumstances in the same general geographical area. The quality of the workmanship shall be determined in relation to the average of workmanship provided by Union tradesmen in the same geographical area. The Architect shall be the sole authority in making such determination.

4.5 Arbitration

4.5.2 Add: The scope of the arbitration shall include both the facts and the issues of the dispute, and its award shall be binding on all parties.

ARTICLE 6 – CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 Owners Right to Perform Work and to Award Separate Contracts

6.1.3 Delete the words "and of each separate Contractor" in the first sentence.

6.2 Mutual Responsibility

6.2.3 Add: If the Contractor does not defend such action, the Owner may, and charge the costs thereof to the Contractor.

ARTICLE 7 – CHANGES IN THE WORK

7.2 Change Orders

7.2.1.2 Overhead and profit are hereby fixed at ten percent (10%) each.

7.2.3 Add: No change orders shall be valid until signed by the Owner.

7.4 Minor Changes in the Work

7.4.1 Add: The changes of this nature if authorized by the Architect shall be paid for from the "General Allowance".

ARTICLE 9 – PAYMENTS AND COMPLETION

9.3 Applications for Payment

9.3.1 Add: For any contract which exceeds $100,000, partial monthly payments shall be made as work progresses to cover the amount of work completed as of the time specified in the Contractor's application for payment less a 2% retainage. In lieu of the retainage, a Contractor may agree to deposit with the Owner negotiable bearer bonds of the State of New Jersey or negotiable bearer bonds or notes of any particular subdivision of the State of New Jersey, the value of which is equal to the amount necessary to satisfy the amount that otherwise would be withheld as specified above. The nature and amount of bonds or notes to be deposited shall be subject to the approval of the Owner. "Value" shall mean par value or current market value, whichever is lower. If bonds or notes are deposited, they shall, together with any interest accruing on them, be returned to the Contractor upon successful completion of the terms of the Contract.

For any contract of $100,000 or less, retainage shall be 10%. When the work is 50% complete, if on schedule, the Architect may, at this point or anytime after, authorize monthly payments to the full value of the monthly estimate. If full monthly payments have been started and progress, workmanship or cooperation should lapse, the Architect may, for this or any other reason, resume the retainage of ten percent (10%).

9.3.2 Add: Materials delivered but not installed shall be paid for on the basis of 75% of the invoice, and may be contingent upon insurance by the Contractor against theft and vandalism.

9.8 Substantial Completion

9.8.1 Add: The Contractor shall allow access by the Owner to any portion of such building substantially completed, when all bills approved by the Architect have been paid.

9.10 Final Completion and Final Payment

9.10.1 Add: The monies withheld (retainage) by the Owner from monthly payments to the Contractor shall constitute the final payment, to be paid upon final completion and Architect's certification.

9.10.2 Add: A proof of payment and affidavit shall be delivered to the surety company and the surety company, after examination as called for in the statement form, shall complete and deliver to the Owner, prior to Contractor's final payment, the Statement of Surety Company as attached to these specifications. With the request for final payment, the Contractor shall provide all required special guarantees, warranties, and certificates of approval.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY Add:

10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the contract.

10.4 Security

10.4.1 The General Contractor shall provide all temporary doors and closures to obtain building security from vandals or burglars as soon as practicable during the course of construction. If a watchman becomes required due to job conditions, then the Owner shall obtain and pay for same.

ARTICLE 11 – INSURANCE AND BONDS

11.1 Contractor's Liability Insurance

11.1.1 Expand as follows:

a. The Contractor is to provide any pay for a comprehensive liability policy with minimum limits: $1,000,000 per person per accident and $1,000,000 per accident and $1,000,000 aggregate property damage per accident. The limits are to be uniform for each of the following categories:

1. Automobile – Owner and Non-Owner Liability
2. Comprehensive General Operation Liability
3. Contractual Liability including general or specific hold-harmless agreements (refer to NJ Statutes 2A:40A-1 and 2).
4. Liability for completed Operations
5. Personal Defamation of Character with limits of $25,000.00 per person occurrence and $75,000.00 aggregate.

b. Workman's Compensation Insurance shall be provided and paid for by each Contractor in accordance with the laws of the State of New Jersey and shall be sufficient to secure the benefits of the New Jersey Workman's Compensation Law: provide $100,000.00 minimum limits under the employer's liability endorsement.

c. The Subcontractor shall provide insurance for Workman's Compensation and comprehensive liability for the same exposures as the Prime Contractor and as detained in Paragraphs (2) and (b).

11.4 Property Insurance

11.4.1. Add: The contractors and subcontractors are responsible for any and all loss (for any reason whatsoever) that may be sustained to materials stored on the project site before they become an integral part of the building. The contractors and subcontractors shall also be responsible for any loss (for any reason whatsoever) that may by sustained to contractor's or subcontractor's tools or equipment. The contractors and subcontractors shall also be responsible for all damage or loss to glass (installed or otherwise).

11.4.3 Add: Neither approval by the Owner nor a failure to disapprove insurance furnished by a Contractor shall release the Contractor of full responsibility for liability for bodily injury or death, and damage and accidents as set forth herein.

11.5 Performance Bond and Payment Bond

11.5.1 Add: The several prime contractors will each be required to furnish surety company bonds from an approved surety company in the full amounts of their respective contracts for the faithful performance of the Contract and to guarantee the payment of all labor, materials, subcontracts and incidental work in connection therewith. This shall be in such form as will be approved by the Attorney for the Owner.

ARTICLE 12 – UNCOVERING AND CORRECTION OF WORK

12.2 Correction of Work

12.2.1 Add: The Architect's services shall be charged at $200 per man hour.

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.1 Governing Laws

13.1.2 Add the following: Attention is called to the following State Laws which apply to Public Work in the State of New Jersey.

CHAPTER 9, TITLE 34, Revised Statutes, providing that the citizens of the State of New Jersey who have resided in the State not less than one (1) year be given preference in employment on public works, Contractors shall employ local labor to the extent that qualified employees are available.

CHAPTER 10, TITLE 34, Revised Statutes, providing in the contract for establishment of an eight-hour working day for laborers, workmen, and mechanics.

CHAPTER 150, LAWS OF 1963, The New Jersey Prevailing Wage Act stipulation of minimum prevailing wages applies to all public projects as they apply in this locality. See Wage Rate Statement which is on file with the Secretary of the Board of Education or the local governing body where applicable. All contractors shall submit payroll records with request for payment as per requirements of the NJ Department of Labor

CHAPTER 2, TITLE 10, Revised Statues, the Contractor as a condition of the Contract shall and hereby does agree that the following shall be part of the contract.

That no Contractor or Subcontractor, nor any person on his behalf shall discriminate against any employee hired for the performance of work under this contract on account of race, creed, color, or sex.

That there may be deducted from the amount payable to the Contractor by the Owner a penalty of Five Dollars ($5.00) for each person for each calendar day during which such person is discriminated against in violation of the provisions of the Contract.

CHAPTER 15, TITLE 40, and CHAPTERS 32, and 33 TITLE 52, Revised Statutes and TITLE 18A: 18A-20 whereby the Contractor as a condition of the Contract shall and hereby does agree, that in the performance of the Project, only domestic materials and manufactured and farm products of the United States will be used whenever available.

13.5 Tests and Inspections

13.5.6 Add: Testing shall be monitored by or performed by a licensed testing laboratory under a general allowance for testing; as provided for in the division of this specification entitled "Testing", under General Construction.

13.6 Interest

13.6.1 Delete and substitute in lieu of : Any monies authorized by the Architect not paid within 35 days of that time noted in the Agreement shall bear interest at the rate of one (1) point over Prime, from that date of payment established in the Agreement.

ARTICLE 14 – TERMINATION OR SUSPENSION OF THE CONTRACT

14.2 Termination by the Owner for Cause – Add:

14.2.5 The expense of finishing the work shall include compensation for additional architectural, at $135 per man per hour, managerial and administrative services, including legal charges, as well as any additional financial expense incurred. The expenses incurred by the Owner as herein provided, and the damage incurred through Contractor's default, shall be certified by the Architect, whose certificate thereof shall be conclusive. A strike of over twenty (20) working days shall be cause for termination of contract under these conditions. "Strikes" in this instance shall mean local type jurisdictional or "wild-cat" strikes, and not Union-wide contract connected strikes.

ARTICLE 15 – SUPPLEMENTARY PROVISIONS

15.1 Temporary Offices

Each Contractor shall provide his own office on the premises and remove same when directed. The General Contractor shall have installed a pay telephone until the completion of the project. The General Contractor shall also make available the office and telephone for the Architect's representative, and allow space for use by a testing laboratory when on-site control is required.

15.2 Job Site Meetings

Regularly stated job site meetings shall be held as determined by the Architect. Each Contractor, or his authorized representative, who shall be authorized to speak for and/or make decisions for the Contractor, shall attend.

15.3 Sanitation

The General Contractor shall provide and maintain in clean working order at all times portable enclosed latrines in the quantity to accommodate all the workmen on the job.

15.4 Time of Completion

The date of substantial completion of the contract or contracts shall be 180 Days from issuance of the construction permits

15.5 Liquidated Damages

a. Should any prime contractor fail to substantially complete the work included under his contract, the Owner may retain $500.00 per calendar day for each and every day the entire work under his contract remains in default after the stipulated time of completion. This sum shall be agreed upon in the contract, not as a penalty, but as liquidated and ascertained damages, and shall represent a fair approximation of the additional expenses of the Owner because of non-completion by the original date. Refer to Article 8 in the AIA General Conditions.

b. A deduction shall be made from the contract price by the Owner for any wages paid by the Owner to any inspector(s), architects, engineers, or construction managers necessarily employed by the Owner on the work, for any number of days in excess of the number allowed in the specifications (see Time of Completion).

AIA® Document A101™ – 2017

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

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

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

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

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

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

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

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

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TABLE OF ARTICLES

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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:

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

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

[ ] By the following date:

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

Portion of Work	Substantial Completion Date

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

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

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

Item	Price

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

Item	Price	Conditions for Acceptance

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

Item	Price

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

Item	Units and Limitations	Price per Unit ($0.00)

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

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

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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 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

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

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date

.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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AIA® Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐ ARCHITECT: ☐
	CONTRACT FOR:	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐ OTHER: ☐

STATE OF:
COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment ☐ Yes ☐ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

_____
(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

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AIA® Document G704™ – 2017

Certificate of Substantial Completion

PROJECT: *(name and address)*	CONTRACT INFORMATION: Contract For: Date:	CERTIFICATE INFORMATION: Certificate Number: 001 Date:
OWNER: *(name and address)*	ARCHITECT: *(name and address)*	CONTRACTOR: *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.
(Identify the Work, or portion thereof, that is substantially complete.)

ARCHITECT *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE OF SUBSTANTIAL COMPLETION

WARRANTIES
The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:
(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

WORK TO BE COMPLETED OR CORRECTED
A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:
(Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within ( ) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: $

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:
(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE
OWNER *(Firm Name)*	SIGNATURE	PRINTED NAME AND TITLE	DATE

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SECTION 011000 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project consists of alterations to the existing utility office/employees building. The work is primarily updating the interior finishes and installing new exterior windows.

1. Project Location: Vineland, New Jersey.
2. Owner: Vineland Municipal Electric Utility

B. The Contract Documents for the Contractor's Guaranteed Maximum Price are dated March 2026.

C. Information was prepared for the Project by Joseph F. McKernan Jr., Architects and Associates, 100 Dobbs Lane, Suite 204, Cherry Hill, New Jersey 08034.

D. The Work will be bid under a single prime.

E. The scope of work consists of all labor, materials, equipment, and means to perform the Project listed above: including General Construction, Site, Structural, Plumbing, HVAC, Electrical and Fire Protection.

1.3 WORK SEQUENCE

A. The Work will be conducted in a single phase at building.

1.4 CONTRACTOR USE OF PREMISES

A. General: During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. General allowances.

C. Related Sections include the following:

1. Schedules: The Contractor's Construction Schedule is specified in Division I Section "Submittals."

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

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

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

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

1.6 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

GENERAL ALLOWANCE

A. Allowance No. 1 – **General Allowance** **($45,000):** This allowance is for work directed by the Architect/Owner.

END OF SECTION 012100

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. **Alternate No. 1, ADD: New Windows:**

1. Additional cost for replacing all existing windows with new storefront and casement windows as detailed, using EFCO, Tubelite storefront and Tubelite sash compatible sash. Refer to the Specification Section 084113.

B. **Alternate No. 2, ADD: New Epoxy Flooring.**

1. Submit the additional cost for replacing the existing floor covering in the two (2) rooms noted on the floor plan and room finish schedule an Epoxy Resinous system.
2. Scope of alternate; remove existing floor covering, clean and prep the concrete slab as required, install the new epoxy resinous floor system as specified in Section 096723.

C. **Alternate No 3, ADD: Paint Lockers:**

1. Submit the additional cost to electrostatically paint the existing lockers to match the new lockers that were installed as part of the Base Bid scope of work.

D. **Alternate No. 4, ADD: New Lockers:**

1. Submit the additional price for supplying and installing all new lockers. These would be the units required beyond the Base Bed scope of new lockers.

END OF SECTION 012300

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for procedural requirements for handling and processing allowances.
2. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 7 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days after such authorization.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.6 CHANGE ORDER PROCEDURES

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

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for procedural requirements governing handling and processing of allowances.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with Continuation Sheets.
b. Submittals Schedule.
c. Schedule of Allowances.
d. List of principal suppliers and fabricators.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than 10 days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

a. Project name and location.
b. Name of Architect.
c. Architect's project number.
d. Contractor's name and address.
e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

    a. Related Specification Section or Division.
    b. Description of the Work.
    c. Name of subcontractor.
    d. Name of manufacturer or fabricator.
    e. Name of supplier.
    f. Change Orders (numbers) that affect value.
    g. Dollar value.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

    1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Payment Application Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included at end of this Section.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

F. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Products list.
5. Submittals Schedule (preliminary if not final).
6. Initial progress report.
7. Certificates of insurance and insurance policies.
8. Data needed to acquire Owner's insurance.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Project meetings.
6. Cleaning and protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Installation and removal of temporary facilities and controls.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other contractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 CLEANING AND PROTECTING

A. Clean and protect construction in progress and adjoining materials in place, during, handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION 013100

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final Completion construction photographs.

1.3 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include the same label information as the corresponding set of photographs.

C. Construction Photographs: Submit four prints of each photographic view within seven days of taking photographs.

1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade stock, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
2. Identification: On back of each print provide an applied label or rubber-stamped impression with the following information:

a. Name of Project.
b. Name and address of photographer.
c. Name of Architect and Construction Manager.
d. Name of Contractor.
e. Date photograph was taken.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

3. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints. Identify electronic media with date photographs were taken. Submit images that have the same aspect ratio as the sensor, uncropped.

1.4 QUALITY ASSURANCE

A. Photographer Qualifications: An individual of established reputation who has been regularly engaged as a professional photographer for not less than three years.

1.5 COORDINATION

A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities including temporary lighting.

1.6 USAGE RIGHTS

A. Digital Images: Obtain and transfer copyright usage rights from photographer to Owner and his consultants for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPEG format, with minimum sensor size of 5.0 megapixels.

PART 3 - EXECUTION

3.1 PHOTOGRAPHS, GENERAL

A. Photographer: Engage a qualified commercial photographer to take construction photographs.

B. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

C. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs the same as for those submitted to Architect and Construction Manager.

3.2 CONSTRUCTION PHOTOGRAPHS

A. Preconstruction Photographs: Before starting construction, take digital photographs of Project site and surrounding properties from different vantage points, as directed by Architect or Construction Manager.

1. Take 10 photographs to show existing conditions adjacent to the property before starting the Work.
2. Take 10 photographs of existing buildings either on or adjoining the property to accurately record the physical conditions at the start of construction.

B. Periodic Construction Photographs: Take 10 digital photographs monthly, with the cutoff date associated with each Application for Payment. Photographer shall select vantage points to best show status of construction and progress since the last photographs were taken.

a. Interior Work, through date of Substantial Completion.

C. Final Completion Construction Photographs: Take 10 digital photographs after date of Substantial Completion for submission as Project Record Documents. Architect or Construction Manager will direct photographer for desired vantage points.

1. Do not include date stamp.

D. Additional Photographs: Architect or Construction Manager may issue requests for additional photographs, in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Photographer will be given three days' notice, where feasible.
2. In emergency situations, photographer shall take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

   a. Special events planned at Project site.
   b. Immediate follow-up when on-site events result in construction damage or losses.
   c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
   d. Substantial Completion of a major phase or component of the Work.
   e. Extra record photographs at time of final acceptance.
   f. Owner's request for special publicity photographs.

4. Show protection efforts by Contractor.
5. Photographer shall select vantage points.

END OF SECTION 013233

SECTION 013300 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

B. Related Sections include the following:

1. Division 1 Section "Application for Payment" for submitting Applications for Payment.
2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.

1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Allow 7 days for processing each resubmittal.
4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space on the label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Number and title of appropriate Specification Section.
    i. Drawing number and detail references, as appropriate.

E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.

F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will not accept submittals received from sources other than Contractor.

1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
3. Transmittal Form: Use AIA Document G810.
4. Transmittal Form: Provide locations on form for the following information:

    a. Project name.
    b. Date.
    c. Destination (To:).
    d. Source (From:).
    e. Names of subcontractor, manufacturer, and supplier.
    f. Category and type of submittal.
    g. Submittal purpose and description.
    h. Submittal and transmittal distribution record.
    i. Remarks.
    j. Signature of transmitter.

G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

H. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit four copies of each submittal, unless otherwise indicated. Architect will return two copies. Mark up and retain one returned copy as a Project Record Document.
2. Number of Copies: Submit copies of each submittal, as follows, unless otherwise indicated:

a. Initial Submittal: Submit a preliminary single copy of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. Architect will return submittal with options selected.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Compliance with recognized trade association standards.
h. Compliance with recognized testing agency standards.
i. Application of testing agency labels and seals.
j. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Templates and patterns.
g. Design calculations.
h. Compliance with specified standards.
i. Notation of coordination requirements.
j. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. A sufficient number of copies to allow the Architect to retain for reviewed copies of all drawings, schedules and brochures shall be submitted for approval. Black line prints, blue line prints or reproducible transparency are required. Blueprints (white lines on blue background) are not acceptable. Each submittal shall have the job name on it and the appropriate specification section or contract drawings reference.

D. Samples: Prepare physical units of materials or products, including the following:

1. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.
2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:

    a. Generic description of Sample.
    b. Product name or name of manufacturer.
    c. Sample source.
    d. Specification Section number and reference.

5. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:

    a. Size limitations.
    b. Compliance with recognized standards.
    c. Availability.
    d. Delivery time.

6. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.

    a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
    b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

7. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect return submittal with options selected.
8. Number of Samples for Verification: Submit three sets of Samples. Architect retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.

    a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

E. Application for Payment: Comply with requirements in Division 1 Section "Payment Procedures."

F. Schedule of Values: Comply with requirements in Division 1 Section "Payment Procedures."

G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

H. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Architect, Architect will not review this information but will return it with no action taken.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. "Reviewed Only" – There are no notations or comments on the submittal and, in our opinion, the submittal meets the requirements of the Contract Documents and the CONTRACTOR may release the equipment for production.
2. "Reviewed with Comments" – Notations have been made on the submittals to insure conformance with the Contract Documents. The CONTRACTOR may release the equipment for production in accordance with the notations.
3. "Revise and Resubmit" – When the material submitted is incorrect or insufficient to review properly and it is necessary to see the complete package again.
4. "Rejected" – The submittal does not meet the requirements of the Contract Documents. The CONTRACTOR must submit the specified product.

END OF SECTION 013300

SECTION 014000 - QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section "Allowances" for testing and inspecting allowances.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Mockups establish the standard by which the Work will be judged.

D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1. The Contactor shall provide the testing agency credentials for approval. The Conteractor shall coordinate the scheduling of all agency requirements and the testing agency payment shall go thru the Contractor's Testing Allowance.

1.4 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.6 QUALITY CONTROL

A. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

C. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re--inspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
5. Do not perform any duties of Contractor.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

A. An approved laboratory submitted by the Contractor.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. Temporary Facilities include, but are not limited to, the following:

1. Job Trailers for the Contractor
2. Job Trailers for the Owners Representative
3. Job Meetings
4. Material Storage Trailers

C. Temporary utilities include, but are not limited to, the following:

1. Temporary fencing required at excavations.
2. Water service and distribution.
3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
4. Electric power service.
5. Lighting.
6. Heat.

D. Support facilities include, but are not limited to, the following:

1. Waste disposal facilities.

E. Related Sections include the following:

1. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
2. Division 1 Section "Execution Requirements" for progress cleaning requirements.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:

1. Owner's construction forces.
2. Architect.
3. Testing agencies.
4. Personnel of authorities have jurisdiction.

B. Sanitary Facilities: Pay temporary sewer service use charges for sewer usage, by all parties engaged in construction, at Project site. Provide a portable sanitary facility on the site during the construction period.

1.4 QUALITY ASSURANCE

A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.

1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.

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

B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.

B. Temporary fencing shall be four (4) feet high, using orange plastic snow fencing. The fence shall be installed using steel post spaced at no more than four (4) feet apart.

2.2 EQUIPMENT

A. General: Provide equipment suitable for use intended.

B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

D. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

2.3 TEMPORARY FACILITIES

A. FIELD OFFICES

1. Provide, at locations designated or otherwise approved by the Owner, separate field offices for the Contractor and the Resident Project Representative. Unless otherwise approved, the Contractor's field office shall be large enough, and furnished, to conduct progress meetings. The Contractor's field office is to be an official place of business for the Contractor at which an authorized agent of the Contractor will be present while work is in progress. The record documents required to be maintained by the Contractor per Article 6.19 of the General Conditions shall be kept at the Contractor's field office.

2. The Resident Project Representative's field office shall be a substantial, weatherproof, heated, air conditioned, lighted office in like new condition with lock and keys having floor space of not less than 256 square feet (8' x 32'). The field office shall be a ModSpace 8'x 28' mobile office or equivalent.

3. For added security, the windows of the office shall have security bars or heavy gage steel wire mesh on the outside and all doors shall be fitted with hasps and padlocks. Install wooden stairs and platforms with handrail at each exterior door. Provide access walkways as required to each entrance. Trailers shall be leveled on blocks and furnished with tie-down straps and anchors. The office shall be furnished and equipped with the following:

   - (2) desks (built-in type, one at each end of trailer), (2) office chairs and (4) folding chairs
   - drawing table and drafting stool
   - 1 – 6' plastic folding table
   - wall shelves - minimum 16 lineal feet of 12" wide wood shelving
   - (2) 4-drawer file cabinets
   - Internet Connection: Contractor to provide internet connection to this trailer and maintain the connection for the duration of the project.
   - A color laser jet Printer / scanner and associated software - HP Office Jet 8710 or equal. Contractor to provide toner and maintenance throughout the project.
   - metal wastebasket
   - weekly janitorial service
   - fire extinguisher
   - first-aid kit
   - Electric water cooler with hot and cold water faucets, microwave and an accessory refrigerator – Contractor to maintain water supply
   - Electric connection shall be from Contractors temporary power service.

4. The Owners Trailer shall be a substantial, weatherproof, heated, air conditioned, lighted office in like new condition with lock and keys having floor space of not less than 2,160 square feet (24' x 60'). The field office shall be a ModSpace 24''x 60' complex or equivalent. It shall have at a minimum four offices and an open floor space in the center. It shall be located adjacent to the existing garage area in coordination with the Owner needs.

5. For added security, the windows of the office shall have security bars or heavy gage steel wire mesh on the outside and all doors shall be fitted with hasps and padlocks. Install wooden stairs and platforms with handrail at each exterior door. Provide access walkways as required to each entrance. Trailers shall be leveled on blocks and furnished with tie-down straps and anchors. The office shall be furnished and equipped with the following:

B. The field offices shall be maintained until final acceptance of the project unless otherwise approved by the Owner.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.

1. Provide rubber hoses as necessary to serve Project site.

B. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.

1. Install power distribution wiring overhead and rise vertically where least exposed to damage.
2. Connect temporary service to Owner's existing power source, as directed by electric company officials.

C. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
2. Provide warning signs at power outlets other than 110 to 120 V.
3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
4. Provide metal conduit enclosures or boxes for wiring devices.

D. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 SUPPORT FACILITIES INSTALLATION

A. Lifts and Hoists: Provide facilities for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for products selected under an allowance.
2. Division 1 Section "Closeout Procedures" for submitting warranties for contract closeout.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products to allow for inspection and measurement of quantity or counting of units.
6. Store materials in a manner that will not endanger Project structure.
7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
8. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
9. Protect stored products from damage.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

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

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Where products are accompanied by the term "as selected," Architect will make selection.

3. Where products are accompanied by the term "match sample," sample to be matched is Architect's.

B. Product Selection Procedures: Procedures for product selection include the following:

1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.

   a. Substitutions may be considered, unless otherwise indicated.

2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

3. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

4. Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

5. Product Options: Where Specification paragraphs titled "Product Options" indicate that size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide either the specific product or system indicated or a comparable product or system by another manufacturer. Comply with provisions in "Product Substitutions" Article.

6. Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Product[s]" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

   a. Substitutions will not be considered.

7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.

   a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.

8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.

   a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.

b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

9. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 20 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Cutting and Patching
7. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section "Submittal Procedures" for submitting surveys.
2. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

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

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a licensed land surveyor or professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.

5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

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

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

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

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to **prevent** interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

C. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Project Record Documents.
3. Operation and maintenance manuals.
4. Warranties.
5. Instruction of Owner's personnel.
6. Final cleaning.

B. Related Sections include the following:

1. Division 1 Section "Application for Payment" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
4. Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for products of those Sections.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
2. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
3. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
4. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
7. Complete final cleaning requirements, including touchup painting.

8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
b. Accurately record information in an understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Mark important additional information that was either shown schematically or omitted from original Drawings.
4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings, and Product Date, where applicable.

D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Maintenance Data:

a. Manufacturer's information, including list of spare parts.
b. Name, address, and telephone number of Installer or supplier.
c. Maintenance procedures.
d. Maintenance and service schedules for preventive and routine maintenance.
e. Maintenance record forms.
f. Sources of spare parts and maintenance materials.
g. Copies of maintenance service agreements.
h. Copies of warranties.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

    1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Maintenance manuals for the care and maintenance of products, materials, and finishes.

B. Related Sections include the following:

1. Division 1 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
2. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
3. Division 1 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
4. Divisions 2 through 16 Sections for specific operation and maintenance manual requirements for products in those Sections.

1.3 COORDINATION

A. Where maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. Table of contents.

B. Tables of Contents: Include a table of contents for each maintenance manual.

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (115-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (115-by-280-mm), 20-lb/sq. ft. (75-g/sq. m) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.4 MAINTENANCE MANUAL

A. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

B. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Precautions against improper maintenance.
3. Disassembly; component removal, repair, and replacement; and reassembly instructions.
4. Aligning, adjusting, and checking instructions.

C. Maintenance and Service Schedules: Include service requirements, separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

D. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

E. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to maintenance manuals.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

D. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."

E. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Sections include the following:
1. Division 1 Section "Closeout Procedures" for general closeout procedures and maintenance manual requirements.
2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up Record Prints.
2. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal: Submit one set of corrected Record Transparencies and one set of marked-up Record Prints. Architect will initial and date each transparency and plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return transparencies and prints for organizing into sets, printing, binding, and final submittal.
b. Final Submittal: Submit one set of marked-up Record Prints, one set of record transparencies, and three copies printed from Record Transparencies. Print each Drawing, whether or not changes and additional information were recorded.

1) Electronic Media: CD-ROM.

B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit three copies of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations below first floor.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Architect for resolution.
3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.

2.2 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 033000 - CAST-IN-PLACE CONCRETE

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 specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mix water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

D. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Cementitious materials and aggregates.
2. Steel reinforcement and reinforcement accessories.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work 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.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.

C. ACI Publications: Comply with the following, unless more stringent provisions are indicated:

1. ACI 301, "Specification for Structural Concrete."
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete.

B. Joint Dowel Bars: Plain-steel bars, ASTM A 615/A 615M, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.

2.4 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I or II.

B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:

1. Class: Severe weathering region, but not less than 3S.
2. Nominal Maximum Aggregate Size: 3/4 inch (19 mm).

C. Water: Potable and complying with ASTM C 94.

2.5 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.

B. Air-Entraining Admixture: ASTM C 260.

C. Water-Reducing Admixture: ASTM C 494, Type A.

D. High-Range Water-Reducing Admixture: ASTM C 494, Type F.

E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.6 VAPOR RETARDERS

A. Vapor Retarder: polyethylene sheet, not less than 10 mils (0.25 mm) thick.

2.7 FLOOR AND SLAB TREATMENTS

A. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, non-glazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

B. Penetrating Liquid Floor Treatment: Chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.

C. Products: Subject to compliance with requirements, provide the following penetrating liquid floor treatment products or equal:

1. Day-Chem Sure Hard; Dayton Superior Corporation
2. Euco Diamond Hard; Euclid Chemical Co.
3. Seal Hard; L&M Construction Chemicals, Inc.

2.8 CURING MATERIALS

A. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.9 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.
2. Type I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
3. Type IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Slab-on-Grade: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).
2. Maximum Slump: 4 inches (100 mm).

C. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.

D. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 5 percent +/- 1 percent, unless otherwise indicated.

E. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

F. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.11 FABRICATING REINFORCEMENT

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

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Construct forms tight enough to prevent loss of concrete mortar.

D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

E. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.4 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form from preformed galvanized steel, plastic keyway-section forms, or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Use a bonding agent or epoxy-bonding adhesive, as required, at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groove tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

E. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.

1. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Before placing concrete, water may be added at Project site, subject to limitations of ACI 301.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

3.6 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

3.7 FINISHING SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Trowel and Fine-Broom Finish: All slabs and walks shall receive the following surface finish; apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.

C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.8 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

3.9 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.

B. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, as follows:

1. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six months. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid epoxy joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

END OF SECTION 033000

SECTION 042000 - UNIT MASONRY ASSEMBLIES

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 unit masonry assemblies consisting of the following:

1. Concrete masonry units.
2. Decorative concrete masonry units.
3. Face brick.
4. Mortar and grout.
5. Reinforcing steel.
6. Masonry joint reinforcement.
7. Embedded flashing.
8. Miscellaneous masonry accessories.
9. Expansion joint seals.

B. Related sections include the following:

1. Division 7 Section "Sheet Metal Flashing and Trim" for exposed sheet metal flashing.

C. Products installed, but not furnished, under this Section include the following:

1. Steel lintels for unit masonry, furnished under Division 5 Section "Metal Fabrications."
2. Manufactured reglets in masonry joints for metal flashing, furnished under Division 7 Section "Sheet Metal Flashing and Trim."
3. Hollow-metal frames in unit masonry openings, furnished under Division 8 Section "Steel Frames."

1.3 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

B. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1. For Concrete Unit Masonry: f'm = 1500 psi (10.3 MPa)].

1.4 SUBMITTALS

A. Product Data: For each different masonry unit, accessory, and other manufactured product specified.

B. Samples for Verification: For the following:

1. Full-size units for each different exposed masonry unit required, showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.
2. Accessories embedded in the masonry.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:

1. Each type of masonry unit required.
2. Mortar complying with property requirements of ASTM C 270.

E. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Each type of masonry unit required.
    a. Include test data, measurements, and calculations establishing net-area compressive strength of masonry units.
2. Each cement product required for mortar and grout, including name of manufacturer, brand, type, and weight slips at time of delivery.
3. Each type and size of joint reinforcement.
4. Each type and size of anchor, tie, and metal accessory.

F. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1093 to conduct the testing indicated, as documented according to ASTM E 548.

B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

D. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders. Retesting of materials failing to meet specified requirements shall be done at Contractor's expense.

1. Concrete Masonry Unit Test: For each concrete masonry unit indicated, per ASTM C 140.
2. Prism Test: For each type of wall construction indicated, per ASTM C 1314.
3. Mortar Test: For mortar properties per ASTM C 270.

E. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

1. Protect Type I concrete masonry units from moisture absorption so that, at the time of installation, the moisture content is not more than the maximum allowed at the time of delivery.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

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

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

E. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required.

1. When ambient temperature exceeds 100 deg F (38 deg C), or 90 deg F (32 deg C) with a wind velocity greater than 8 mph (13 km/h), do not spread mortar beds more than 48 inches (1200 mm) ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. General: Provide shapes indicated and as follows:

1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
2. Provide bullnose units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: ASTM C 90 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi (13.1 MPa).
2. Weight Classification: Lightweight or Medium weight, unless otherwise indicated.
3. Provide Type I, moisture-controlled units.
4. Size (Width): Manufactured to the following dimensions:
    a. 6 inches (152 mm) nominal; 5-5/8 inches (143 mm) actual.
    b. 8 inches (203 mm) nominal; 7-5/8 inches (194 mm) actual.
    c. 10 inches (254 mm) nominal; 9-5/8 inches (244 mm) actual.
    d. 12 inches (305 mm) nominal; 11-5/8 inches (295 mm) actual.
5. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.

C. Decorative Concrete Masonry Units: ASTM C 90 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi.
2. Weight Classification: Lightweight or Normal weight, unless otherwise indicated.
3. Provide Type I, moisture-controlled units.
4. Size: (Width) 4", 8", 10" or 12" nominal as detailed: 3 5/8", 7 5/8", 9 5/8" or 11 5/8" actual.
5. Finish: Exposed faces of the following general description matching color, pattern, and texture of Architect's samples.
    a. Normal-weight aggregate, split face finish. manufactured by Westbrook Concrete Block Co., Inc.
    b. Color to be **SF-c12**.
6. Integral Water Repellent: Provide units made with liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive according to ASTM E 514, with test period extended to 24 hours, show no visible water or leaks on the back of the test specimen.
    a. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
        1) Dry-Block; W. R. Grace & Co., Construction Products Division.

2.2 BRICK

A. General: Provide shapes indicated and as follows for each form of brick required:

1. Provide units without cores or frogs and with exposed surfaces finished for ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces.

B. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.

1. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
2. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

C. Face Brick: ASTM C 216, Grade SW , Type FBS, and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3000 psi (20.7 MPa).
2. Initial Rate of Absorption: Less than 20 g/30 sq. in. (20 g/194 sq. cm) per minute when tested per ASTM C 67.
3. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
4. Size: Manufactured to the following actual dimensions:
    a. Modular Size: 3-1/2 to 3-5/8 inches (89 to 92 mm) wide by 2-1/4 to 2-3/8 inches (57 to 60 mm) high by 7-1/2 to 7-5/8 inches (190 to 194 mm) long.
    b. Shapes: Provide shapes as indicated on the drawings.
5. Application: Use where brick is exposed, unless otherwise indicated.
6. Color and Texture: Continental Brick Company – distributed by Belden Tri-State, Trevose, PA 19053, Mr. Tony Gambino, cell (609) 472-2662 office (215) 642-0600.
    a. Type A: Continental Brick Co., Standard 110 Mod.
    b. Type B: Continental Brick Co., Standard 488 Mod.

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.

D. Mortar Cement: ASTM C 1329.

E. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.

F. Aggregate for Grout: ASTM C 404.

G. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.

H. Water: Potable.

I. Color additive as selected by Architect.

2.4 REINFORCING STEEL

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60 (Grade 400).

1. Install all vertical wall reinforcing steel rods as detailed on the structural drawings, grout cores solid, especially at the holding cells.

2.5 MASONRY JOINT REINFORCEMENT

A. General: ASTM A 951 and as follows:

1. Wire Size for Side Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
2. Wire Size for Cross Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
3. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units where indicated.

B. For single-wythe masonry, provide either ladder or truss type with single pair of side rods and cross rods spaced not more than 16 inches (407 mm) o.c.

2.6 TIES AND ANCHORS, GENERAL

A. General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.

B. Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.

C. Steel Sheet, Galvanized after Fabrication: ASTM A 366/A 366M cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153.

D. See Structural Steel Drawings for masonry anchors to steel frame.

2.7 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Fabricate from the following metal complying with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim" and below:

1. Stainless Steel: 0.0156 inch (0.4 mm) thick.
2. Fabricate through-wall metal flashing embedded in masonry from sheet metal indicated above and with ribs at 3-inch (75-mm) intervals along length of flashing to provide an integral mortar bond.
3. Fabricate metal expansion-joint strips from sheet metal indicated above, formed to shape indicated.
4. Fabricate metal drip edges from sheet metal indicated above. Extend at least 3 inches (75 mm) into wall and 1/2 inch (13 mm) out from wall, with a hemmed outer edge bent down 30 degrees.

5. Fabricate metal flashing terminations from sheet metal indicated above. Extend at least 3 inches (75 mm) into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch (19 mm) and then down into joint 3/8 inch (10 mm) to form a stop for retaining sealant backer rod.

B. Contractor's Option for Concealed Flashing: For flashing partly exposed to the exterior, use metal flashing specified above. For flashing not exposed to the exterior, use one of the following, unless otherwise indicated:

1. Elastomeric Thermoplastic Flashing: Manufacturer's standard composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy 0.040 inch (1.0 mm) thick with a 0.015-inch- (0.4-mm-) thick layer of rubberized-asphalt adhesive.

a. Provide flashing as a complete system with preformed corners, end dams, other special shapes, and seaming materials; all produced by flashing sheet manufacturer.

2. EPDM Flashing: Manufacturer's standard flashing product formed from a terpolymer of ethylene-proylene diene, complying with ASTM D 4637, 0.040 inch (1.0mm) thick.

C. Solder and Sealants for Sheet Metal Flashings: As specified in Division 7 Section "Sheet Metal Flashing and Trim."

D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by the flashing manufacturer for bonding flashing sheets to each other and to substrates.

E. Products: Subject to compliance with requirements, provide one of the following:

1. Metal Flashing:

a. Cheney Flashing (Sawtooth); Cheney Flashing Company, Inc.
b. Keystone 3-Way Interlocking Thruwall Flashing; Keystone Flashing Co.

2. Elastomeric Thermoplastic Flashing:

a. Hyload Flashing Membrane; Hyload Cloaked Flashing System.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

B. Plastic Weep Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, designed to fill head joint with outside face held back 1/8 inch (3 mm) from exterior face of masonry, in color selected from manufacturer's standard.

C. Cavity Drainage Material: 1 1/2-inch- (38-mm) thick, free-draining mesh; made from polyethylene strands and shaped to avoid being clogged by mortar droppings.

D. Products: Subject to compliance with requirements, provide one of the following:

1. Cavity Drainage Material:

a. Mortar Net; Mortar Net USA, Ltd.

E. Expansion Joint Seals: Preformed, silicone faced, pre-compressed primary seal foam joint fillers in sizes and profiles shown or as recommended by the manufacturer. Color to match building materials selected from manufacturer's 26 standard colors.

1. Colorseal by Emseal.
2. Joint Master 1200 Series Foam Seal by Inpro, or approved equal.

2.9 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Mortar for Unit Masonry: Comply with ASTM C 270.

1. Extended-Life Mortar for Unit Masonry: Mortar complying with ASTM C 1142 may be used instead of mortar specified above, at Contractor's option.
2. Limit cementitious materials in mortar to portland cement, mortar cement, and lime.
3. For masonry below grade, in contact with earth, and where indicated, use Type S.
4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.

C. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143.

2.10 SOURCE QUALITY CONTROL

A. Owner will engage a qualified independent testing agency to perform source quality-control testing indicated below:

1. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders.
2. Retesting of materials failing to meet specified requirements shall be done at Contractor's expense.

B. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this Section and in other Sections of the Specifications.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.

D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

1. Mix units from several pallets or cubes as they are placed.

3.3 CONSTRUCTION TOLERANCES

A. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:

B. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.

C. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), nor 1/2 inch (12 mm) maximum.

D. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.

E. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).

F. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

1. Brick – One-half running bond with vertical joint in each course at third point on units in courses above and below.
2. CMU – One-half running bond with vertical joints centered on units above and below.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches (50 mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-third-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

F. Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.

G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.

H. Fill cores in hollow concrete masonry units with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. At fire-rated partitions, install firestopping in joint between top of partition and underside of structure above to comply with Division 7 Section "Firestopping."

J. Install all vertical steel bar reinforcing as detailed and grout solid, especially at the holding cells.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

B. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

1. At cavity walls, bevel beds away from cavity, to minimize mortar protrusions into cavity. As work progresses, trowel mortar fins protruding into cavity flat against the cavity face of the brick.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.

3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.

   a. Reinforcement above is in addition to continuous reinforcement.

B. Do not cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, pipe enclosures, and other special conditions.

3.7 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joints in unit masonry where indicated. Build-in related items as masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake joint.
2. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete.

C. Form expansion joints in brick made from clay or shale as follows:

1. Form open joint of width indicated, but not less than 3/8 inch (10 mm) for installation of sealant and backer rod specified in Division 7 Section "Joint Sealants." Keep joint free and clear of mortar.

D. Build in horizontal, pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealants."

3.8 LINTELS

A. Install steel lintels where indicated. Use galvanized angles at exterior walls.

1. Steel lintels shall be field primed and painted as directed by the Architect.

B. Provide masonry lintels where shown and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are shown without structural steel or other supporting lintels.

1. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated. Cure precast lintels by the same method used for concrete masonry units.
2. Provide prefabricated or built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.
3. Provide either of above at Contractor's option or provide precast or formed-in-place concrete lintels complying with requirements in Division 3 Section "Cast-in-Place Concrete."
4. Color and texture of pre-cast masonry lintels shall match the adjacent CMU units.

C. Provide minimum bearing of 8 inches (200 mm) at each jamb, unless otherwise indicated.

3.9 FLASHING, WEEP HOLES, AND VENTS

A. General: Install embedded flashing and weep vents in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

B. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Unless otherwise indicated, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

C. Install flashing as follows:

1. At masonry-veneer walls, extend flashing from exterior face of veneer, through veneer, up face of sheathing at least 8 inches (200 mm), and behind air-infiltration barrier.
2. At lintels and shelf angles, extend flashing a minimum of 4 inches (100 mm) into masonry at each end. At heads and sills, extend flashing 4 inches (100 mm) at ends and turn flashing up not less than 2 inches (50 mm) to form a pan.
3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 7 Section "Joint Sealants" for application indicated.
4. Extend sheet metal flashing 1/2 inch (13 mm) beyond face of masonry at exterior and turn flashing down to form a drip.
5. Install metal drip edges beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal drip edge.
6. Install metal flashing termination beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal flashing termination.
7. Cut flashing off flush with face of wall after masonry wall construction is completed.

D. Install weep vents in the head joints in exterior wythes of the first course of masonry immediately above embedded flashing and as follows:

1. Use plastic weep vents or open head joints to form weep holes.
2. Space weep holes 16 inches o.c.
3. Place cavity drainage material immediately above flashing in cavities.

E. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

3.10 FIELD QUALITY CONTROL

A. Contractor will engage a qualified independent testing agency to perform field quality-control testing indicated below.

B. Testing Frequency: Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. (465 sq. m) of wall area or portion thereof.

C. Mortar properties will be tested per ASTM C 780.

D. Grout will be sampled and tested for compressive strength per ASTM C 1019.

E. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

F. Prism-Test Method: For each type of wall construction indicated, masonry prisms will be tested per ASTM C 1314, and as follows:

1. Prepare 1 set of prisms for testing at 7 days and 1 set for testing at 28 days.

3.11 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Clean brick by the bucket-and-brush hand-cleaning method described in BIA Technical Notes No. 20, using job-mixed detergent solution.
4. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

A. Recycling: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Disposal as Fill Material: Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 2 Section "Earthwork."
3. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.

C. Excess Masonry Waste: Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property. Recycling of masonry waste is preferred.

END OF SECTION 042000

SECTION 061000 - MISCELLANEOUS CARPENTRY

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 the following:

1. Framing with dimension lumber.
2. Wood furring, grounds, nailers, and blocking.
3. Plywood panels.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:

1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.

C. Warranty of chemical treatment manufacturer for each type of treatment.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.

1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:

1. NELMA - Northeastern Lumber Manufacturers Association.
2. SPIB - Southern Pine Inspection Bureau.
3. WCLIB - West Coast Lumber Inspection Bureau.
4. WWPA - Western Wood Products Association.

C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece.

D. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

1. Provide dressed lumber, S4S, unless otherwise indicated.
2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.

1. Do not use chemicals containing chromium or arsenic.

    a. Chemical shall be Amine (ACQ)

2. For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.

B. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing members less than 18 inches (460 mm) above grade.
4. Wood floor plates installed over concrete slabs directly in contact with earth.

C. Pressure treated wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m).

2.3 DIMENSION LUMBER

A. General: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated.

B. All framing lumber for use in the exterior walls, interior bearing partition and floor joists shall have a fiber stress certification of 1200 psi. All lumber delivered to the project shall be stamped with the grade of fiber stress rating.

2.4 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.

B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.

C. Moisture Content: 19 percent maximum for lumber items are not specified to receive wood preservative treatment.

D. Grade: For miscellaneous lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common grade per NELMA, NLGA, or WWPA; No. 2 grade per SPIB; or Standard grade per NLGA, WCLIB or WWPA of any species.

2.5 WOOD-BASED STRUCTURAL-USE PANELS

A. Structural-Use Panel Standards: Provide either all-veneer, mat-formed, or composite panels complying with DOC PS 2, "Performance Standard for Wood-Based Structural-Use Panels," unless otherwise indicated. Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood," where plywood is indicated.

B. Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.

1. Span Ratings: Provide panels with span ratings required to meet "Code Plus" provisions of APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial."

C. Miscellaneous Concealed Panels: APA-rated sheathing, Exposure 1, span rating to suit framing in each location.

D. Plywood Backing Panels: For mounting electrical or telephone equipment, provide thirty (30) fire-retardant-treated plywood panels with grade, C-D Plugged Exposure 1, in thickness indicated or, if not otherwise indicated, not less than 15/32 inch (11.9 mm) thick.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.

B. Nails, Wire, Brads, and Staples: FS FF-N-105.

C. Power-Driven Fasteners: CABO NER-272.

D. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.

C. Fit carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.

D. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

E. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

F. Countersink nail heads on exposed carpentry work and fill holes with wood filler.

G. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

A. Install where shown and where required for screeding or attaching other work. Cut and shape to required size. Coordinate locations with other work involved.

B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

C. Install all required blocking for: toilet accessories, signs, lockers, projection screens, appliances, detention equipment, acoustical wall panels, louvers, window casework, window shades, clocks, and any other items requiring wood blocking.

3.3 INSTALLATION OF STRUCTURAL-USE PANELS

A. General: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.

1. Comply with "Code Plus" provisions of the above referenced guide.

END OF SECTION 061000

SECTION 072100 - BUILDING INSULATION

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 the following: Adjust list below to suit Project. Delete applications such as cavity wall insulation and safing insulation that are specified in other Sections.

1. Concealed building insulation.
2. Sound attenuation insulation.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 9 Section "Gypsum Board Assemblies" for insulation installed as part of metal-framed wall and partition assemblies.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of insulation product specified.

C. Product test reports from and based on tests performed by a qualified independent testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, water absorption, and other properties, based on comprehensive testing of current products.

1.4 QUALITY ASSURANCE

A. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products complying with requirements indicated without delaying the Work.

B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated on Drawings or specified elsewhere in this Section as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84.
2. Fire-Resistance Ratings: ASTM E 119.
3. Combustion Characteristics: ASTM E 136.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide insulation products from one of the following:

1. Glass-Fiber Insulation:

a. CertainTeed Corporation.
b. Owens-Corning Fiberglas Corporation.
c. Schuller International, Inc.

2. Mineral-Fiber Insulation, Sound attenuation and Fire stopping:

a. Roxul, Inc.

2.2 MATERIALS

A. General: Provide insulating materials that comply with requirements and with referenced standards.

1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths.

B. Extruded-Polystyrene Board Insulation: Rigid, cellular polystyrene thermal insulation formed from polystyrene base resin by an extrusion process using hydro chlorofluorocarbons as blowing agent to comply with ASTM C 578 for type and with other requirements indicated below:

1. Type IV, 1.60-lb/cu. ft. (26-kg/cu. m) minimum density, unless otherwise indicated.
2. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indices of 75 and 450, respectively.
3. Use extruded polystyrene board insulation for under slab, cavity wall insulation and curtain wall insulation panels.

C. Faced Mineral-Fiber Blanket Insulation: Thermal insulation combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665, Type III, Class A (blankets with reflective vapor-retarder membrane facing and flame spread of 25 or less); with scrim-kraft.

1. Mineral-Fiber Type: Fibers manufactured from glass, FSK, formaldehyde free, 25% recycled material content.

2. Flanged Units: Provide blankets fabricated with facing incorporating 5-inch- (127-mm-) wide flanges along edges for attachment to framing members.
3. "R" value as noted on the plans.
4. Acoustic attenuation blanket insulation, thickness as noted on the plans.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or that interfere with insulation attachment.

3.3 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B. Install insulation that is undamaged, dry, unsoiled, and has not been exposed at any time to ice and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Apply single layer of insulation to produce thickness indicated.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

D. Set reflective, foil-faced units with not less than 0.75-inch (19-mm) air space in front of foil as indicated.

E. Install mineral-fiber blankets in cavities formed by framing members according to the following requirements:

1. Use blanket widths and lengths that fill cavities formed by framing members. Where more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

F. Install the acoustic blankets in the walls as noted, to be full width between framing members and full height of the partition.

3.5 PROTECTION

A. General: Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 07260 - UNDER-SLAB VAPOR BARRIER

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. Products supplied under this section:

1. Vapor barrier and installation accessories for installation under concrete slabs.

B. Related sections:

1. See structural drawings.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM E1745- 11Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
2. ASTM E1643- 11Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. Technical Reference - American Concrete Institute (ACI):

1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
2. ACI 302.1R-15 Guide to Concrete Floor and Slab Construction.

1.4 SUBMITTALS

A. Quality control/assurance:

1. Summary of test results per paragraph 9.3 of ASTM E1745.
2. Manufacturer's 12" X 12" samples and literature.
3. Manufacturer's installation instructions for placement, seaming, penetration prevention and repair, and perimeter seal per ASTM E1643.
4. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 Section 8.1.
5. Installer shall contact the vapor barrier manufacture for a preinstallation meeting and on site inspections of the installation. The manufacturer shall issue a written report following each visit to the site.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Vapor barrier shall have all of the following qualities:

1. Maintain permeance of less than 0.01 Perms [grains/(ft² · hr · inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
2. Other performance criteria:
   a. Strength: ASTM E1745 Class A.
   b. Thickness: 15 mils minimum
3. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1

B. Vapor barrier products:

1. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC., (877) 464-7834 www.stegoindustries.com.
2. No substitutions.

2.2 ACCESSORIES

A. Seams:

1. Stego Tape by Stego Industries LLC.

B. Sealing Penetrations of Vapor barrier:

1. Stego Tape by Stego Industries LLC.

C. Perimeter/edge seal:

1. Stego Tack Tape by Stego Industries LLC.

D. Penetration Prevention:

1. Beast Foot by Stego Industries LLC.

E. Vapor Barrier-Safe Screed System

1. Beast Screed by Stego Industries, LLC.

PART 3 – EXECUTION

3.1 PREPARATION

A. Ensure that subsoil is approved by Architect or Geotechnical Engineer.

1. Level and compact base material.

3.2 INSTALLATION

A. Install vapor barrier in accordance ASTM E1643.

1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
    a. Seal vapor barrier to the entire perimeter wall or footing/grade beam with double sided StegoTack Tape, , per manufacturer's instructions. Ensure the concrete is clean and dry prior to adhering tape.
3. Overlap joints 6 inches and seal with manufacturer's seam tape.
4. Apply seam tape to a clean and dry vapor barrier.
5. Seal all penetrations (including pipes) per manufacturer's instructions.
6. For interior forming applications, avoid the use of non-permanent stakes driven through vapor barrier. Use blunt-end and/or threaded nail stakes (screed pad posts) and insert them into Beast Foot. Ensure Beast Foot's peel-and-stick adhesive base is fully adhered to the vapor barrier
7. If non-permanent stakes must be driven through vapor retarder, repair as recommended by vapor retarder manufacturer.
8. Use reinforcing bar supports with base sections that eliminate or minimize the potential for puncture of the vapor barrier.
9. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture and tensile.
10. For vapor barrier-safe concrete screeding applications, install Beast Screed (vapor barrier-safe screed system) per manufacturer's instructions prior to placing concrete.

B. On site inspections of the vapor barrier installation by the product manufacturer.

1. The contractor shall request that the vapor barrier manufacturer perform a site inspection after each section of barrier is completed.
2. The manufacturer's inspector shall issue a report after each site visit and notify the Contractor of any problems.
3. The manufacturer's representative shall authorize the contractor to proceed if the installation is acceptable.

END OF SECTION 072600

SECTION 079200 - JOINT SEALANTS

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 sealants for the following applications, including those specified by reference to this Section:

B. This Section includes sealants for the following applications:

1. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:

a. Joints in exterior systems; stone, brick or aluminum window systems.
b. Joints between different materials listed above.
c. Perimeter joints between materials listed above and frames of doors and windows.
d. Other joints as indicated.

2. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

a. Control and expansion joints on exposed interior surfaces of exterior walls.
b. Perimeter joints of exterior openings where indicated.
c. Vertical control joints on exposed surfaces of interior unit masonry walls and partitions.
d. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
e. Joints between plumbing fixtures and adjoining walls, floors, and counters.
f. Other joints as indicated.

1.3 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.

F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
2. When joint substrates are wet.

B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.8 WARRANTY

A. General Warranty: 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. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

C. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products indicated for each type in the sealant schedules at the end of Part 3.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

2.3 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified in the Elastomeric Joint-Sealant Schedule to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2.4 LATEX JOINT SEALANTS

A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

2.5 ACOUSTICAL JOINT SEALANTS

A. Acoustical Sealant for Exposed and Concealed Joints: For each product of this description indicated in the Acoustical Joint-Sealant Schedule at the end of Part 3, provide manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:

2.6 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

2.7 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:
    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
    a. Metal.
    b. Glass.
    c. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability. Install backer rods in all joints of the dimensional stone cladding.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.

F. Install sealants by proven techniques to comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses provided for each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

3.6 ELASTOMERIC JOINT-SEALANT SCHEDULE

A. Low-Modulus Nonacid-Curing Silicone Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following:

    a. 790; Dow Corning.
    b. 864; Pecora Corporation.
    c. Spectrem 1; Tremco.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Additional Movement Capability: 50 percent movement in extension and 50 percent movement in compression for a total of [100] percent movement.
5. Use Related to Exposure: NT (nontraffic).
6. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
7. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.

B. Medium-Modulus Neutral-Curing Silicone Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following:

    a. 756 H.P.; Dow Corning.
    b. Silglaze II; GE Silicones.
    c. 895; Pecora Corporation.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Additional Movement Capability: 50 percent movement in extension and 50 percent movement in compression for a total of 100 percent movement.
5. Use[s] Related to Exposure: NT (nontraffic)
6. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

C. Single-Component Nonsag Urethane Sealant : Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following:

    a. Chem-Calk 945; Bostik Inc.
    b. Dynatrol I; Pecora Corporation.
    c. DyMonic; Tremco.

2. Type and Grade: S (single component) and NS (nonsag).
3. Use Related to Exposure: NT (nontraffic).
4. Uses Related to Joint Substrates: M, [G,] A, and, as applicable to joint substrates indicated, O.

3.7 LATEX JOINT-SEALANT SCHEDULE

A. Latex Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following:

a. Chem-Calk 600; Bostik Inc.
b. AC-20; Pecora Corporation.
c. Sonolac; Sonneborn Building Products Div., ChemRex, Inc.
d. Tremflex 834; Tremco.

2. Applications: Interior Painted Walls, Control Joints in painted interior masonry walls.

3.8 ACOUSTICAL JOINT-SEALANT SCHEDULE

A. Acoustical Sealant for Exposed and Concealed Joints: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following:

a. AC-20 FTR Acoustical and Insulation Sealant; Pecora Corporation.
b. SHEETROCK Acoustical Sealant; USG Corp., United States Gypsum Co.

2. Applications: where indicated

END OF SECTION 079200

SECTION 081113 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes steel doors and frames.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 4 Section "Unit Masonry" for building anchors into and grouting frames in masonry construction.
2. Division 8 Section "Door Hardware" for door hardware and weatherstripping.
3. Division 9 Section "Painting" for field painting primed doors and frames.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.

C. Shop Drawings showing fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

1.4 QUALITY ASSURANCE

A. Provide doors and frames complying with ANSI/SDI 100 "Recommended Specifications for Standard Steel Doors and Frames" and as specified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.

B. Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If cardboard wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Steel Doors and Frames:

a. Ceco Door Products.
b. Kewanee Corp.
c. Steelcraft.

2.2 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.

1. Internal Construction: One of the following manufacturer's standard core materials according to SDI standards:

a. Rigid polyurethane conforming to ASTM C 591.
b. Unitized steel grid.
c. Vertical steel stiffeners.
d. Rigid mineral fiber with internal sound deadener on inside of face sheets.

2. Clearances: Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between non-fire-rated pairs of doors. Not more than 3/4 inch (19 mm) at bottom.

B. Fabricate exposed faces of doors and panels from only cold-rolled steel sheet.

C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

E. Galvanized Steel Doors, Panels, and Frames: For the following locations, fabricate doors, panels, and frames from galvanized steel sheet according to SDI 112. Close top and bottom edges of doors flush as an integral part of door construction or by addition of minimum 0.0635-inch- (1.6-mm-) thick galvanized steel channels, with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.

F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

G. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal-insulating door and frame assemblies and tested according to ASTM C 236 or ASTM C 976 on fully operable door assemblies.

1. Unless otherwise indicated, provide thermal-rated assemblies with U-value rating of 0.41 Btu/sq. ft. x h x deg F (2.33 W/sq. m x K) or better.

I. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.

J. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

K. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware Institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2.2 MATERIALS

A. Hot-Rolled Steel Sheets and Strip: Commercial-quality carbon steel, pickled and oiled, complying with ASTM A 569.

B. Cold-Rolled Steel Sheets: Carbon steel complying with ASTM A 366, commercial quality, or ASTM A 620, drawing quality, special killed.

C. Galvanized Steel Sheets: Zinc-coated carbon steel complying with ASTM A 526, commercial quality, or ASTM A 642, drawing quality, hot-dip galvanized according to ASTM A 525, with A 60 or G 60 coating designation, mill phosphatized.

D. Supports and Anchors: Fabricated from not less than 0.0478-inch- thick steel sheet; 0.0516-inch- thick galvanized steel where used with galvanized steel frames.

E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize complying with ASTM A 153, Class C or D as applicable.

2.3 DOORS

A. Steel Doors: Provide 1-3/4-inch- thick doors of materials and ANSI/SDI 100 grades and models specified below, or as indicated on Drawings or schedules:

1. Interior Doors: Grade I, standard-duty, Model 1, full flush design, minimum 0.0635-inch (16 ga.)-thick galvanized steel sheet faces.
2. Exterior Doors: Grade II, heavy-duty, Model 1, full flush design, minimum 0.0785-inch (14 ga.)-thick galvanized steel sheet face with full core urethane insulation foam.

2.4 FRAMES

A. Provide metal frames for doors, according to ANSI/SDI 100, and of types and styles as shown on Drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate exterior frames of minimum 0.0785-inch (14 ga.)- thick galvanized steel sheet. Fabricate interior frames of minimum 0.0635 –inch (16 ga.) thick galvanized steel sheet.

1. Fabricate frames with mitered or coped and continuously welded corners.

B. Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames.

C. Plaster Guards: Provide minimum 0.0179-inch- thick steel plaster guards or mortar boxes at back of hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

2.5 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.

1. Internal Construction: One of the following manufacturer's standard core materials according to SDI standards:
    a. Rigid polyurethane conforming to ASTM C 591.
    b. Unitized steel grid.
    c. Vertical steel stiffeners.
2. Clearances: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between non-fire-rated pairs of doors. Not more than 3/4 inch at bottom.
3. Fabricate exposed faces of doors and panels, from only cold-rolled steel sheet.
4. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
5. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

B. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts and conceal with body filler.

C. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal-insulating door and frame assemblies and tested according to ASTM C 236 or ASTM C 976 on fully operable door assemblies.

1. Unless otherwise indicated, provide thermal-rated assemblies with U-value rating of 0.41 Btu/sq. ft. x h x deg F or better.

D. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.

E. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

F. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware Institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2.6 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for steel sheet finishes.

C. Apply primers and organic finishes to doors and frames after fabrication.

2.7 GALVANIZED STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces with nonpetroleum solvent so that surfaces are free of oil or other contaminants. After cleaning, apply a conversion coating of the type suited to the organic coating applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.

1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC-Paint 20.

B. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply air-dried primer specified below immediately after cleaning and pretreatment.

1. Shop Primer: Zinc-dust, zinc-oxide primer paint complying with performance requirements of FS TT-P-641, Type II.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions of SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Place frames before constructing enclosing walls and ceilings.
2. In masonry construction, install at least 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
3. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels.

C. Door Installation: Fit hollow-metal doors accurately in frames, within clearances specified in ANSI/SDI 100.

3.2 ADJUSTING AND CLEANING

A. Prime Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

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 the following:

1. Solid-core doors with wood-veneer faces.
2. Factory finishing flush wood doors.

1.3 SUBMITTALS

A. Product Data: For each type of door. Include details of core and edge construction, trim for openings, and louvers.

1. Include factory-finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.

1. Indicate dimensions and locations of mortises and holes for hardware.
2. Indicate doors to be factory finished and finish requirements.

C. Samples for Initial Selection: Color charts consisting of actual materials in small sections for the following:

1. Faces of factory-finished doors with transparent finish. Show the full range of colors available for stained finishes.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.

B. Quality Standard: Comply with the following standard:

1. NWWDA Quality Standard: NWWDA I.S.1-A, "Architectural Wood Flush Doors."
2. AWI Quality Standard: AWI's "Architectural Woodwork Quality Standards" for grade of door, core, construction, finish, and other requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's written instructions.

1. Individually package doors in plastic bags or cardboard cartons.

B. Mark each door with individual opening numbers used on Shop Drawings. Use removable tags or concealed markings.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during the remainder of the construction period to comply with requirements of the referenced quality standard for Project's geographical location.

1.7 WARRANTY

A. General Warranty: Door manufacturer's warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form, signed by manufacturer, Installer, and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup, or twist) more than 1/4 inch (6.35 mm) in a 42-by-84-inch (1067-by-2134-mm) section or that show telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 75-mm) span, or do not comply with tolerances in referenced quality standard.

1. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
2. Warranty shall be in effect during the following period of time after the date of Substantial Completion:

a. Solid-Core Interior Doors: Lifetime of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Flush Wood Doors:

a. VT Industries, Inc.
b. Eggers Industries; Architectural Door Division.
c. Weyerhaeuser Co.

2.2 DOOR CONSTRUCTION, GENERAL

A. Doors for Transparent Finish: Comply with the following requirements:

1. Grade: Custom, with Grade AA faces.
2. Faces: Select White Birch, stain finish to be selected.
3. Match between Veneer Leaves: Slip match.
4. Match within Door Faces: Running match.
5. Pair and Set Match: Provide for pairs of doors and for doors hung in adjacent sets.
6. Stiles: Applied wood edges of same species as faces and covering edges of faces.

2.3 SOLID-CORE DOORS

A. Particleboard Cores: Comply with the following requirements:

1. Particleboard: ANSI A208.1, Grade LD-2.
2. Blocking: Provide wood blocking at particleboard-core doors as follows:

a. 5-inch (125-mm) top-rail blocking, at doors indicated to have closers.
b. 5-inch (125-mm) bottom-rail blocking, at exterior doors and doors indicated to have kick, mop, or armor plates.
c. 5-inch (125-mm) midrail blocking, at doors indicated to have exit devices.

B. Interior Veneer-Faced Doors: Comply with the following requirements:

1. Core: Particleboard core.
2. Construction: Five plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.

2.4 LITE FRAMES

A. Wood Frames for Lite Openings: As follows:

1. Wood Species: Same species as door faces.
2. Profile: Recessed tapered beads.
3. Profile: Manufacturer's standard shape.

2.5 LOUVERS

A. Install a metal louver in the new doors as indicated on the schedule.

B. Louvers to be 6"h x 24"w, finish shall be painted a color to match or blend with the stain wood finish on the doors.

2.6 FABRICATION

A. Fabricate flush wood doors in sizes indicated for Project site fitting.

B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels, unless otherwise indicated:

1. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements of NFPA 80 for fire-rated doors.

C. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.

1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.

2.7 FACTORY FINISHING

A. General: Comply with referenced quality standard's requirements for factory finishing.

B. Finish wood doors at factory.

C. Transparent Finish: Comply with requirements indicated for grade, finish system, staining effect, and sheen.

1. Grade: Premium.
2. Finish: Manufacturer's standard finish with performance requirements comparable to AWI System TR-6 catalyzed polyurethane.
3. Staining: Clear or color as selected.
4. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine installed door frames before hanging doors.

1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Division 8 Section "Door Hardware."

B. Manufacturer's Written Instructions: Install wood doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.

1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.

C. Job-Fit Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold.

    a. Comply with NFPA 80 for fire-rated doors.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.
3. Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) on lock edge; trim stiles and rails only to extent permitted by labeling agency.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E. Factory-Finished Doors: Restore finish before installation, if fitting or machining is required at Project site.

3.3 ADJUSTING AND PROTECTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Refinish or replace doors damaged during installation.

C. Protect doors as recommended by door manufacturer to ensure that wood doors are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 081416

SECTION 084113 – ALUMINUM STOREFRONT AND WINDOWS

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 the following:
   1. Storefront system with operating casement sash.
   2. Units to be assembled in a continuous strip as detailed on the drawings using mullions as part of the system.

B. Related sections include the following:

   1. Division 7 Section "Joint Sealants" for joint sealants installed as part of aluminum entrance and storefront systems.
   2. Division 8 Section "Glazing" for glazing requirements.

1.3 SYSTEM DESCRIPTION

A. General: Provide aluminum windows capable of withstanding loads and thermal and structural movement requirements indicated without failure, based on testing manufacturer's standard units in assemblies similar to those indicated for this Project. Failure includes the following:

   1. Air infiltration and water penetration exceeding specified limits, exterior only.
   2. Framing members transferring stresses, including those caused by thermal and structural movement, to glazing units.

B. Glazing: Physically and thermally isolate glazing from framing members, exterior only.

C. Thermally Broken Construction: Provide systems that isolate aluminum exposed to exterior from aluminum exposed to interior with a material of low thermal conductance, exterior only.

D. Wind Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of authorities having jurisdiction or the American Society of Civil Engineers' ASCE 7, "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent, exterior only.

   1. Deflection of framing members in a direction normal to wall plane is limited to 1/175 of clear span or 3/4 inch (19 mm), whichever is smaller, unless otherwise indicated.
   2. Static-Pressure Test Performance: Provide entrance and storefront systems that do not evidence material failures, structural distress, failure of operating components to function normally, or permanent deformation of main framing members exceeding 0.2 percent of clear span when tested according to ASTM E 330.

      a. Test Pressure: 150 percent of inward and outward wind-load design pressures.

b. Duration: As required by design wind velocity; fastest 1 mile (1.609 km) of wind for relevant exposure category.

E. Dead Loads: Provide entrance- and storefront-system members that do not deflect an amount which will reduce glazing bite below 75 percent of design dimension when carrying full dead load.

1. Provide a minimum 1/8-inch (3.18-mm) clearance between members and top of glazing or other fixed part immediately below.

F. Live Loads: Provide entrance and storefront systems, including anchorage, that accommodate the supporting structures' deflection from uniformly distributed and concentrated live loads indicated without failure of materials or permanent deformation.

G. Air Infiltration: Provide entrance and storefront systems with permanent resistance to air leakage through fixed glazing and frame areas of not more than 0.06 cfm/sq. ft. (0.3 L/s/sq. m) of fixed wall area when tested according to ASTM E 283 at a static-air-pressure difference of 1.57 lbf/sq. ft. (75.2 Pa).

H. Water Penetration: Provide entrance and storefront systems that do not evidence water leakage through fixed glazing and frame areas when tested according to ASTM E 331 at minimum differential pressure of 20 percent of inward-acting wind-load design pressure as defined by ASCE 7, "Minimum Design Loads for Buildings and Other Structures," but not less than 6.24 lbf/sq. ft. (299 Pa). Water leakage is defined as follows:

I. Thermal Movements: Provide entrance and storefront systems, including anchorage, that accommodate thermal movements of systems and supporting elements resulting from the following maximum change (range) in ambient and surface temperatures without buckling, damaging stresses on glazing, failure of joint sealants, damaging loads on fasteners, failure of doors or other operating units to function properly, and other detrimental effects.

J. Condensation Resistance: Provide storefront systems with condensation resistance factor (CRF) of not less than 45 when tested according to AAMA 1503.1.

K. Average Thermal Conductance: Provide storefront systems with average U-values of not more than 0.63 Btu/sq. ft. x h x deg F (3.57 W/sq. m x K) when tested according to AAMA 1503.1.

L. Dimensional Tolerances: Provide entrance and storefront systems that accommodate dimensional tolerances of building frames and other adjacent construction.

1.4 SUBMITTALS

A. Product Data: For each product specified. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes.

B. Shop Drawings: For entrance and storefront systems. Show details of fabrication and installation, including plans, elevations, sections, details of components, provisions for expansion and contraction, and attachments to other work.

C. Sealant Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating that materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with sealants; include joint sealant manufacturers' written interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Any conflicts or problems shall be brought to the Architects attention for resolution before submittals or fabrication starts. If the contractor proceeds prior to resolution by the Architects, they will be responsible for any corrective costs.

1.6 WARRANTY

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

B. Warranty Period: 2 years from date of Substantial Completion.

C. Finish warranty, anodized finish: 10 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide aluminum windows by one of the following:

1. EFCO Corporation, (Tubelite) basis of design
2. YKK Corporation of America.
3. Kawneer Company, Inc.

B. Reference Products:

1. Storefront System, Tubelite, T14000 series, inside glazed, with integral casement sash as detailed.
2. Operable Casement Sash, Tubelite,#3700 series inside glazed with screens. Sash shall be paired with a fixed mullion between the operable sashes.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated, complying with the requirements of standards indicated below.

1. Extruded Bars, Rods, Shapes, and Tubes:ASTM B 221 (ASTM B 221M).

B. Glazing shall be factory installed using inch (1") insulating glass panels, with argon gas in the space between the glass sheets and Low E film.

C. Glazing Gaskets: Manufacturer's standard pressure-glazing system of black, resilient glazing gaskets, setting blocks, and shims or spacers, fabricated from an elastomer of type and in hardness recommended by system and gasket manufacturer to comply with system performance requirements. Provide gasket assemblies that have corners sealed with sealant recommended by gasket manufacturer.

D. Spacers, Setting Blocks, Gaskets, and Bond Breakers: Manufacturer's standard permanent, nonmigrating types in hardness recommended by manufacturer, compatible with sealants, and suitable for system performance requirements.

E. Framing system gaskets, sealants, and joint fillers as recommended by manufacturer for joint type. See details for the different glazing types.

F. Sealants and joint fillers for joints at perimeter of entrance and storefront systems as specified in Division 7 Section "Joint Sealants."

2.3 COMPONENTS

A. Brackets and Reinforcements: Provide manufacturers' standard brackets and reinforcements that are compatible with adjacent materials. Provide nonstaining, nonferrous shims for aligning system components.

B. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Reinforce members as required to retain fastener threads.
2. Do not use exposed fasteners, except for hardware application. For hardware applications, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated.

2.4 HARDWARE

A. General: Finish exposed parts to match door finish, unless otherwise indicated. Factory install the following hardware, as per the finish hardware schedule listed in Finish Hardware Section 08710.

1. Supply and install the following:
   a. Locking handle on operable sash
   b. Finish to match the sash.
2. Provide screens at all operating casement sash, frame color to match the sash.

2.5 FABRICATION

A. General: Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

B. Forming: Form shapes with sharp profiles, straight and free of defects or deformations, before finishing.

C. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to FGMA's "Glazing Manual."

2.6 ALUMINUM FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations related to applying and designating finishes.

B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

C. Aluminum finish shall be dark bronze, anodized finish with a sealer coating, to match the existing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of entrance and storefront systems. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer's written instructions for protecting, handling, and installing windows. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight.

B. Install framing components plumb and true in alignment with established lines and grades without warp or rack of framing members.

C. Install glazing to comply with requirements of Division 8 Section "Glazing," unless otherwise indicated.

D. Install secondary-sealant weatherseal according to sealant manufacturer's written instructions to provide weatherproof joints. Install joint fillers behind sealant as recommended by sealant manufacturer.

E. Install perimeter sealant to comply with requirements of Division 7 Section "Joint Sealants," unless otherwise indicated.

3.3 ADJUSTING AND CLEANING

A. Adjust windows and hardware to provide tight fit at contact points and weather stripping, smooth operation, and weathertight closure.

B. Remove excess sealant and glazing compounds, and dirt from surfaces.

3.4 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure entrance and storefront systems are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 084113

SECTION 087100 - FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.

B. This Section includes the following:

1. Commercial Door Hardware for the following:
    a. Swinging Doors
2. Room identification signs.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 8 Section "Steel Frames" for silencers integral with hollow metal frames.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.

B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
    a. Type, style, function, size, and finish of each hardware item.
    b. Name and manufacturer of each item.
    c. Location of each hardware set cross referenced to indications on Drawings both on floor plans and in door and frame schedule.
    d. Explanation of all abbreviations, symbols, and codes contained in schedule.
    e. Mounting locations for hardware.
    f. Door and frame sizes and materials.
    g. Keying information

D. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.4 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

B All hardware to comply with accessibility requirements, comply with ANSI A117.1 ADA Guidelines.

1.5 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Packaging of door hardware is responsibility of supplier. As material is received by hardware suppliers from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set numbers to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

1.6 MAINTENANCE

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. An asterisk (*) indicated the manufacturer, whose product designation is being used in the Finish Hardware Schedule to establish the minimum requirements for quality and appearance.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Butts and Hinges:
   a. Hager Hinge Co.
   b. McKinney Products Co.
   c. * Stanley Hardware, Div. Stanley Works.

2 Cylinders and Locks:
   a. Schlage
   b. Sargent
   c. Corbin Russwin

3. Bolts:
   a. * Glynn-Johnson.
   b. H. B. Ives, A Harrow Company.

c. Stanley Hardware, Div. Stanley Works.

4. Overhead Closers:
   a. * LCN, Div. Ingersoll-Rand Door Hardware Group.
   b. Norton Door Controls, Div. Yale Security Inc.
   c, Sargent Manufacturing Company.

5. Door Stripping and Seals:
   a. Durable Products
   b. * Reese Enterprises, Inc.
   c. Zero International, Inc.

6. Push/Pulls, Stops, Flush bolts, Kick plates, trim:
   a. Rockwood
   b. * Glynn-Johnson.

7. Silencers:
   a. * Glynn-Johnson
   b. Rockwood

2.2 HINGES AND BUTTS

A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

B. Screws: Provide Phillips flat-head screws complying with the following requirements:

1. For metal door frames install machine screws into drilled and tapped holes.
2. For wood doors install wood screws.
3. For fire-rated wood doors install #12 x 1-1/4-inch (32-mm), threaded-to-the-head steel wood screws.
4. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1. Out-Swing Corridor Doors with Locks: Nonremovable pin.
2. Interior Doors: Nonrising pins.
3. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.

D. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches (2250 mm) or less in height and one additional hinge for each 30 inches (750 mm) of additional height.

2.3 LOCKS, LATCHES, AND BOLTS

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

1. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.

B. Lock Throw: Provide 5/8-inch (16-mm) minimum throw of latch on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

1. Provide 3/4-inch (19-mm) minimum throw of latch for mortise locks. Provide 1-inch (25-mm) minimum throw for all dead bolts.

2.4 CLOSERS AND DOOR CONTROL DEVICES

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit depending on size of door, exposure to weather, and anticipated frequency of use.

1. Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.
2. Provide parallel arms for all overhead closers, except as otherwise indicated.

B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.

A. Combination Door Closers and Holders: Provide units designed to hold door in open position under normal usage and to release and close door automatically under fire conditions. Incorporate an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.

2.5 HARDWARE FINISHES

A. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if no latch or lock sets).

B. Provide finishes that match those established by BHMA or, if none established, match the Architect's sample.

C. 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.

D. Provide protective lacquer coating on all exposed hardware finishes of brass, bronze, and aluminum, except as otherwise indicated. The suffix "-NL" is used with standard finish designations to indicate "no lacquer."

E. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

2.6 SILENCERS

A. All interior door frames shall be equipped with silencers as follows:

1. Single Door Frames – Furnish 3
2. Pair Door Frames – Furnish 2

2.7 SIGNS

A. Provide a 6"x 6" laminated plastic sign for each door.

1. Text shall be etched in the face layer to expose the contrasting core, text to be ¾" high with braille below.
2. All office doors provide a sign that has a one inch (1") slot for inserting a name.
3. Where required, the sign shall have the Handicapped symbol.
4. Sign shall be mounted to meet ADA using double face adhesive tape.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.

1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
2. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."

B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.2 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

1. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

B. Clean adjacent surfaces soiled by hardware installation.

C. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

D. Six-Month Adjustment: Approximately six months after the date of Substantial Completion, the Installer, accompanied by representatives of the manufacturers of latchsets and locksets and of door control devices, and of other major hardware suppliers, shall return to the Project to perform the following work:

1. Examine and re-adjust each item of door hardware as necessary to restore function of doors and hardware to comply with specified requirements.
2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
3. Replace hardware items that have deteriorated or failed due to faulty design, materials, or installation of hardware units.
4. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware.

3.3 HARDWARE SCHEDULE

A. General: Provide hardware for each door to comply with requirements of Section " Door Hardware," hardware set numbers indicated in door schedule, and in the following schedule of hardware sets.

1. Hardware sets indicate quantity and item.
2. manufacturer, product designation, lockset design, size and finish as indicated below.
3. Finish to be: US 26D at all flush doors.

B. Cylindrical Locksets:

1. Schlage "D" Series, Athens Design (Primus).

C. Butts:

1. Interior doors:
   a.. 4 ½" x 4 ½" for 1 ¾ doors – Stanley FBB179 or Hager BB1279

D. Flush Bolts:

1. Glynn-Johnson

E. Push/Pulls, Kickplates:

1. Rockwood
2. Install kickplate on push side of door. Plates shall be 34" x 8".

F. Closer:

1. Norton P8100 Series
2. LCN 4110 Series

3.4 HARDWARE SCHEDULE

A. General: For aluminum entrance doors not part of Allowance, except for lock cylinder and electric operators. All hardware to be furnished by aluminum door supplier except cylinders as required. Hardware: Refer to Section 08410 Aluminum Entrances and Storefronts. Hardware for FRP doors to be furnished by hardware supplier.

Note: Coordinate with Door Schedule.

SET 1

1. Butts, 1 ½ pr BB 4 ½" x 4 ½"
2 Lockset – Passage function
3 Flush bolt at pair of doors
4 Stop
5 Silencers
6 Sign

SET 2

1. Butts, 1 ½ pr BB 4 ½" x 4 ½"
2. Lockset – Office function
4. Stop
5. Silencers
6 Sign

SET 3

1. Butts, 1 ½ pr BB 4 ½" x 4 ½"
2. Push/Pulls
3. Closer
4 Kickplates
5. Stop
6. Sign

SET 4

1. Butts, 1 1/2 pr BB 4 ½" x 4 ½"
2. Lockset, Passage Function
3. Closer
4. Stop
5. Silencers
6. Sign

END OF SECTION 087100

SECTION 088000 - GLAZING

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 glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Exterior aluminum windows.
2. Interior borrowed light panels and sidelights.
3. Mirror glazing.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 8 Section "Doors and Frames" to receive glazing.
2. Division 8 Section "Aluminum Windows.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thicknesses indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:

1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:

a. Specified Design Wind Loads: As indicated in applicable codes for project location.
b. Maximum Lateral Deflection: For glass supported on all four edges, provide thickness required that limits center deflection at design wind pressure to 1/50 times the short side length or 1 inch (25 mm), whichever is less.
c. Minimum Glass Thickness for Exterior Lites: Not less than 6 mm.

C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:

1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
2. For laminated-glass lites, properties are based on products of construction indicated.
3. Center of glass U-Value: NFRC 100 methodology using LBNL WINDOW 7 computer program.
4. Center of glass solar heat gain coefficient: NFRC 200 methodology using LBNL-35298 WINDOW 7 computer program.
5. Solar optical properties: NFRC 300

E. Glass Strength: Analysis shall comply with ASTM E 1300 Determining Load Resistance of Glass in Buildings. Provide glass products in the thickness and strengths (annealed or heat-treated) required to meet or exceed the following criteria based on project loads and in-service conditions.

1. Minimum thickness of annealed or heat-treated glass products to be selected so the worst case probability of failure does not exceed the following:

a. 8 breaks per 1000 for glass installed vertically or not 15 degrees or more from the vertical plane and under wind action.
b. 1 break per 1000 for glass installed 15 degrees or more from the vertical plane and under action of wind and/or snow.

2. Deflection must be limited to prevent disengagement from the frame and be less than or equal to 1".

1.4 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

C. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

D. Product Test Reports: From a qualified testing agency indicating the following products comply with requirements, based on comprehensive testing of current products:

1. Glazing sealants.
2. Glazing gaskets.

E. Samples: for glass tinting color selection, submit 12-inch- (300-mm) x 12 inch-(300-mm) samples of insulated Low-E glass.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.

B. Source Limitations for Clear Glass: Obtain clear float glass from one primary-glass manufacturer.

C. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.

1. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.

D. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1.8 WARRANTY

A. General Warranty: 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. Manufacturer's Special Warranty on Laminated Glass: Written warranty, made out to Owner and signed by laminated-glass manufacturer agreeing to furnish replacements for laminated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: Five years from date of Substantial Completion.

C. Manufacturer's Special Warranty on Insulated Glass units: Written warranty, made out to Owner and signed by insulated-glass manufacturer agreeing to furnish and install replacements for insulated-glass units that deteriorate due to internal moisture, within specified warranty period indicated below.

1. Warranty Period: Five years from date of Substantial Completion.

D. Mirrors: During warranty period, replace mirrors which develop defects in mirror coating due to normal conditions and not due to practices contrary to manufacturer's instructions.

1. Warranty Period: Five years from date of Substantial Completion.

1.9 EXTRA MATERIALS

A. Furnish and deliver to owner one additional insulated glazing unit of each size of first floor exterior windows, at the completion of the project. Units to be crated.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products indicated in schedules at the end of Part 3.

B. Available Insulated Manufacturers: Subject to compliance with requirements, provide products of one of the following manufacturers:
   1. Viracon, Inc.
   2. Ford Glass Division.
   3. Oldcastle Glass.

C. Available Flat Manufacturers: Subject to compliance with requirements, provide products of one of the following manufacturers:

   1. ASSA ABLOY Glass Solutions

2.2 PRIMARY FLOAT GLASS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select); class as indicated in schedules at the end of Part 3.

2.3 MIRROR GLASS

A. Mirror Glass: Clear float glass conforming to specified standard, Quality ql, silvering, If 1/4" thick.

2.4 HEAT TREATED GLASS PRODUCTS

A. Uncoated Clear Heat-Treated Float Glass: Condition A (uncoated surfaces), Type I (transparent glass, flat), Class I (clear), Quality q3 (glazing select), Kind FT (fully tempered).

B. Coated, Tinted, Heat-Treated Float Glass: ASTM C 1048, Condition C (other coated glass), Type I (transparent glass, flat), Class 2 (tinted heat-absorbing and light-reducing), Quality q3 (glazing select), with Low-E, sputter-coat type.

C. Tempered Glass: Provide fully tempered glass only where safety glass is mandatory or where design pressures are beyond the capacity of heat strengthened glass. Tempered glass shall be free from inclusions.

   1. Provide 1/4" thick tempered glass where indicated on drawings.

2.5 LAMINATED GLASS

A. Laminated Glass: Comply with ASTM C 1172 for kinds of laminated glass indicated and other requirements specified, including those in the Laminated-Glass Schedule at the end of Part 3.

B. Interlayer: Interlayer material as indicated below, clear or in colors, and of thickness indicated with a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after laminating glass lites and installation.

1. Interlayer Material: Polyvinyl butyral sheets or cured resin.

C. Laminating Process: Fabricate laminated glass to produce glass free of foreign substances and air or glass pockets.

D. Provide one face of laminated glass to be frosted where scheduled.

2.6 COATED GLASS PRODUCTS

A. Low Emissivity-Coated Glass: Units coated with a durable, neutral-colored, low-emissivity metallic coating, of pyrolytic type and on surface indicated.

2.7 SEALED INSULATED GLAZING UNITS

A. General: Refer to the glazing schedule at the end of PART 3 of the section of the specifications..

2.8 ELASTOMERIC GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:

1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.

B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied, chemically curing sealant in the Glazing Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.

C. Glazing Sealant for Fire-Resistive Glazing Products: Identical to product used in test assembly to obtain fire-protection rating.

2.9 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent; non-staining and non-migrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; packaged on

rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tape: Closed-cell, PVC foam tape; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:

1. Type 1, for glazing applications in which tape acts as the primary sealant.

2.10 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

2.11 MIRRORED GLASS FABRICATION

A. Glass Coating: Coat second surface of glass with successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard protective organic coating to produce coating system that complies with FS DD-M-0041, except with salt spray test period extended to 300 hours and undercutting, discolorations, blackening, and silver impairment at mirror edges not greater than 118-inch.

B. Mirror Sizes: After application of glass coating, cut mirrored glass to final sizes and in the following nominal glass thickness as expressed by metric designation/nominal decimal of an inch/(traditional designation):

1. Thickness: 1/4", unless otherwise indicated.

C. Mirror Edge Treatment: Provide forms of edge treatment indicated below, with edges sealed after treatment to prevent chemical or atmospheric penetration of glass coating:

1. Polished edge of width shown, unless otherwise indicated.
2. Perform edge treatment and sealing in factory immediately after cutting to final sizes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing glazing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where the length plus width is larger than 50 inches (1270 mm) as follows:

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Do not remove release paper from tape until just before each glazing unit is installed.

F. Apply heel bead of elastomeric sealant.

G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weather-tight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.6 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

3.7 MONOLITHIC FLOAT-GLASS SCHEDULE

A. Uncoated Float Glass: Where glass as designated below is indicated, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:

1. Uncoated Clear Annealed Float Glass: Annealed or Kind HS (heat strengthened), Condition A (uncoated surfaces) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with performance requirements, ¼" thick.
2. Uncoated Clear Fully Tempered Float Glass: Kind FT (fully tempered), ¼" thick.
3. Provide frosted glass for one face of the insulating panels as scheduled.

3.8 INTERIOR GLAZING SCHEDULE

A. Glass Types: Provide the following glass types as indicated on the Contract Documents. The schedule indicates minimum glass thickness, unless otherwise required to achieve specified performance criteria.

1. Type G-01: 1/4-inch clear laminated safety glass.

3.9 EXTERIOR GLASS SCHEDULE

A. Glass Types: Provide the following glass types as indicated on the Contract Documents. The schedule indicates minimum glass thickness, unless otherwise required to achieve specified performance criteria.

1. Type G-02: Provide 1-inch insulated glass panel:

a. Outer Lite: 1/4-inch-thick clear tempered float glass, Vitro, Atlantica Solorban 60, Low E coating on No.2 surface.
b. Air Space: 1/2-inch.
c. Inner Lite: 1/4-inch clear tempered float glass.
d. Roller wave to be all in the same direction throughout the project.
e. Basis-of-Design Product: Design is based on Vitro Atlantica with coatings noted, as manufactured by Virto.

2. Performance Requirements:

a. Visible Light Transmittance: 53%
b. Exterior Reflectance: 8%
c. Winter U-Value: 0.29 Btu
d. Solar Heat Gain Coefficient: 0.31
e. Light to Solar Gain Ratio: 1.71

END OF SECTION 088000

SECTION 092900 - GYPSUM BOARD ASSEMBLIES

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 the following:

1. Non load-bearing steel framing members for gypsum board assemblies.
2. Gypsum board assemblies attached to steel framing.
3. Tile backing gypsum board.

1.3 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA-505 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.4 ASSEMBLY PERFORMANCE REQUIREMENTS

A. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

1.5 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of product specified.

C. Shop Drawings showing locations, fabrication, and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other units of Work.

D. Product certificates signed by manufacturers of gypsum board assembly components certifying that their products comply with specified requirements.

1.6 QUALITY ASSURANCE

A. Single-Source Responsibility for Steel Framing: Obtain steel framing members for gypsum board assemblies from a single manufacturer, unless otherwise indicated.

B. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.

C. Single-Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

1.8 PROJECT CONDITIONS

A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 requirements or gypsum board manufacturer's recommendations, whichever are more stringent.

B. Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours before application and continuously after until dry. Do not exceed 95 deg F (35 deg C) when using temporary heat sources.

C. Ventilation: Ventilate building spaces as required to dry joint treatment materials. Avoid drafts during hot, dry weather to prevent finishing materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Steel Framing and Furring:
    a. Dale Industries, Inc.
    b. Marino/Ware (formerly Marino Industries Corp.).
    c. National Gypsum Co.; Gold Bond Building Products Division.
2. Grid Suspension Assemblies:
    a. Armstrong World Industries, Inc.
    b. Chicago Metallic Corp.
    c. USG Interiors, Inc.
3. Gypsum Board and Related Products:
    a. Georgia-Pacific Corp.
    b. National Gypsum Co.; Gold Bond Building Products Division.
    c. United States Gypsum Co.

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

A. General: Provide components complying with ASTM C 754 for conditions indicated.

B. Wire Ties: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.062 inch (1.6 mm) thick.

C. Wire Hangers: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.162-inch (4.1-mm) diameter.

D. Channels: Cold-rolled steel, 0.0598-inch (1.5-mm) minimum thickness of base (uncoated) metal and 7/16-inch- (11.1-mm-) wide flanges, and as follows:

1. Carrying Channels: 1-1/2 inches (38.1 mm) deep, 475 lb/1000 feet (70 kg/100 m), unless otherwise indicated.
2. Furring Channels: 3/4 inch (19.1 mm) deep, 300 lb/1000 feet (45 kg/100 m), unless otherwise indicated.
3. Finish: Rust-inhibitive paint, unless otherwise indicated.
4. Finish: ASTM A 653, G 60 (ASTM A 653M, Z 180) hot-dip galvanized coating for framing for exterior soffits and where indicated.

E. Steel Studs for Furring Channels: ASTM C 645, with flange edges of studs bent back 90 degrees and doubled over to form 3/16-inch- (5-mm-) wide minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:

1. Thickness: 0.0329 inch (0.84 mm), unless otherwise indicated.
2. Depth: 3-5/8 inches (92.1 mm), unless otherwise indicated.
3. Depth: As indicated.
4. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating.

F. Steel Rigid Furring Channels: ASTM C 645, hat shaped, depth of 7/8 inch (22.2 mm), and minimum thickness of base (uncoated) metal as follows:

1. Thickness: 0.0329 inch (0.84 mm), unless otherwise indicated.
2. Thickness: As indicated.
3. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating.

G. Grid Suspension System for Interior Ceilings: ASTM C 645, manufacturer's standard direct-hung grid suspension system composed of main beams and cross-furring members that interlock to form a modular supporting network.

2.3 STEEL FRAMING FOR WALLS AND PARTITIONS

A. General: Provide steel framing members complying with the following requirements:

1. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating.

B. Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 degrees and doubled over to form 3/16-inch- (5-mm-) wide minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:

1. Thickness: 0.0329 inch (20 gage) (0.84 mm) as follows:
2. Depth: 3-5/8 inches (92.1 mm), unless otherwise indicated.
3. Depth: 6 inches (152.4 mm) where indicated.
4. Thickness to be 0.0429 inch (18 gage) for walls over 12'-0" high.

C. Deflection Track: Manufacturer's top runner complying with the requirements of ASTM C 645 and with 2-inch- (50.8-mm-) deep flanges.

D. Steel Flat Strap and Backing Plate: Steel sheet for blocking and bracing complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M), length and width as indicated, and with a minimum base metal (uncoated) thickness as follows:

1. Thickness: 0.0329 inch (0.84 mm) where indicated.

E. Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.

2.4 GYPSUM BOARD PRODUCTS

A. General: Provide gypsum board of types indicated in maximum lengths available that will minimize end-to-end butt joints in each area indicated to receive gypsum board application.

1. Widths: Provide gypsum board in widths of 48 inches (1219 mm).

B. Gypsum Wallboard: ASTM C 36, National Gypsum, Gold Bond XP (purple) Gypsum Board and as follows:

1. Type: Gold Bond XP (purple) for all interior locations.
2. Type: Gold Bond XP Fire-Shield Gypsum Board with Sporgard where required for fire-resistance-rated assemblies.
3. Type: Water-Resistant Gypsum Backing Board for tiled walls.
4. Type: Sag-resistant type for ceiling surfaces.
5. Edges: Tapered.
6. Thickness: 1/2 inch (12.7 mm), for ceilings and soffits.
7. Thickness: 5/8 inch (15.9 mm) unless otherwise indicated.

C. Exterior Sheathing:

1. Type: DensGlass, 5/8 inch thick, by Georgia Pacific.

2.5 TRIM ACCESSORIES

A. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below:

1. Material: Formed metal or plastic, with metal complying with the following requirement:
   a. Steel sheet zinc coated by hot-dip process or rolled zinc.

2. Shapes indicated below by reference to Fig. 1 designations in ASTM C 1047:
   a. Cornerbead on outside corners, unless otherwise indicated.
   b. L-bead with face flange only; face flange formed to receive joint compound. Use L-bead where indicated.
   c. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.
   d. Reveal Bead in ceiling, "Reveal" Stock # 5110, ½"x ½", or equal, refer to ceiling plan.

2.6 JOINT TREATMENT MATERIALS

A. General:Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.

B. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated.

1. Use pressure-sensitive or staple-attached, open-weave, glass-fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated.

C. Drying-Type Joint Compounds for Gypsum Board: Factory-packaged vinyl-based products complying with the following requirements for formulation and intended use.

1. Ready-Mixed Formulation: Factory-mixed product.

a. Taping compound formulated for embedding tape and for first coat over fasteners and face flanges of trim accessories.
b. Topping compound formulated for fill (second) and finish (third) coats.
c. All-purpose compound formulated for both taping and topping compounds.

2.7 ACOUSTICAL SEALANT

A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following requirements:

B. Acoustical Sealant for Concealed Joints: Manufacturer's standard nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound.

C. Available Products: Subject to compliance with requirements, acoustical sealants that may be incorporated in the Work include, but are not limited to, the following:

1. See Section 07920 for acoustical sealants

2.8 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.

B. Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum panels.

C. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot-grouting hollow metal door frames.

D. Fastening Adhesive for Metal: Special adhesive recommended for laminating gypsum panels to steel framing.

E. Steel drill screws complying with ASTM C 1002 for the following applications:

1. Fastening gypsum board to steel members less than 0.033 inch (0.84 mm) thick.

F. Sound-Attenuation Blankets: Unfaced mineral-fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing).

1. Mineral-Fiber Type: Roxul or equal.

G. Thermal Insulation: See Section 07210 for Thermal Insulation

a. Mineral-Fiber Type: Fibers manufactured from glass.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Ceiling Anchorages: Coordinate installation of ceiling suspension systems with installation of overhead structural assemblies to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers that will develop their full strength and at spacing required to support ceilings.

3.3 INSTALLING STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

B. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with recommendations of gypsum board manufacturer or, if none available, with United States Gypsum Co.'s "Gypsum Construction Handbook."

C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement. Comply with details shown on Drawings.

1. Where partition framing and wall furring abut structure, except at floor.

a. Install deflection track top runner to attain lateral support and avoid axial loading.

D. Do not bridge building control and expansion joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members as indicated.

3.4 INSTALLING STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

A. Suspend ceiling hangers from building structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail.
4. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
5. Do not attach hangers to steel deck tabs.
6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
7. Do not connect or suspend steel framing from ducts, pipes, or conduit.

B. Sway-brace suspended steel framing with hangers used for support.

C. Install suspended steel framing components in sizes and at spacings indicated, but not less than that required by the referenced steel framing installation standard.

1. Wire Hangers: 48 inches (1219 mm) o.c.
2. Carrying Channels (Main Runners): 48 inches (1219 mm) o.c.
3. Furring Channels (Furring Members): 16 inches (406 mm) o.c.

D. Installation Tolerances: Install steel framing components for suspended ceilings so that cross-furring or grid suspension members are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) as measured both lengthwise on each member and transversely between parallel members.

E. Wire-tie or clip furring members to main runners and to other structural supports as indicated.

F. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

3.5 INSTALLING STEEL FRAMING FOR WALLS AND PARTITIONS

A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum board stud assemblies abut other construction.

1. Where studs are installed directly against exterior walls, install asphalt felt strips or foam gaskets between studs and wall.

B. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch (3 mm) from the plane formed by the faces of adjacent framing.

C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.

1. Cut studs 1/2 inch (13 mm) short of full height to provide perimeter relief.

2. For STC-rated and fire-resistance-rated partitions that extend to the underside of floor/roof slabs and decks or other continuous solid structural surfaces to obtain ratings, install framing around structural and other members extending below floor/roof slabs and decks, as needed, to support gypsum board closures needed to make partitions continuous from floor to underside of solid structure.

D. Install steel studs and furring in sizes and at spacings indicated.

1. Single-Layer Construction: Space studs 16 inches (406 mm) o.c., unless otherwise indicated.

E. Frame door openings to comply with GA-219, and with applicable published recommendations of gypsum board manufacturer, unless otherwise indicated. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

1. Install 2 studs at each jamb, unless otherwise indicated.
2. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (12.7-mm) clearance from jamb stud to allow for installation of control joint.
3. Extend jamb studs through suspended ceilings and attach to underside of floor or roof structure above.

F. Frame openings other than door openings to comply with details indicated or, if none indicated, as required for door openings. Install framing below sills of openings to match framing required above door heads.

3.6 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.

B. Install sound-attenuation blankets, where indicated, prior to installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

C. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

D. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

E. Locate both edge or end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Avoid joints other than control joints at corners of framed openings where possible.

F. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

G. Attach gypsum panels to framing provided at openings and cutouts.

H. Spot grout hollow metal door frames for solid-core wood doors, hollow metal doors, and doors over 32 inches (813 mm) wide. Apply spot grout at each jamb anchor clip and immediately insert gypsum panels into frames.

I. Form control and expansion joints at locations indicated and as detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels.

J. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases that are braced internally.

1. Except where concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

K. Where STC-rated gypsum board assemblies are indicated, seal construction at perimeters, behind control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant including a bead at both faces of the partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.

L. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

1. Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications.

3.7 GYPSUM BOARD APPLICATION METHODS

A. Single-Layer Application: Install gypsum wallboard panels as follows:

1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistance-rated assemblies. Use maximum-length panels to minimize end joints.

a. Stagger abutting end joints not less than one framing member in alternate courses of board.

B. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows:

1. Fasten with screws and glue.

C. Multiple Layer Application:

1. Install multiple layers by alternating horizontal and vertical panels.
2. Screws shall be long enough to penetrate the metal stud a minimum of ¾".

3.8 INSTALLING TRIM ACCESSORIES

A. General: For trim accessories with back flanges, fasten to framing with the same fasteners used to fasten gypsum board. Otherwise, fasten trim accessories according to accessory manufacturer's directions for type, length, and spacing of fasteners.

B. Install corner bead at external corners.

C. Install edge trim where edge of gypsum panels would otherwise be exposed. Provide edge trim type with face flange formed to receive joint compound, except where other types are indicated.

1. Install L-bead where edge trim can only be installed after gypsum panels are installed.
2. Install aluminum trim and other accessories where indicated.

D. Install control joints according to ASTM C 840 and manufacturer's recommendations, with a maximum spacing of 30', or as shown in specific locations by the Architect for visual effect.

3.9 FINISHING GYPSUM BOARD ASSEMBLIES

A. General: Treat gypsum board joints, interior angles, flanges of corner bead, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.

B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.

C. Apply joint tape over gypsum board joints and to flanges of trim accessories as recommended by trim accessory manufacturer.

D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.

1. Level 1 for ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
2. Level 4 for gypsum board surfaces, unless otherwise indicated.

E. Use the following joint compound combination as applicable to the finish levels specified:

1. Embedding and First Coat: Ready-mixed, drying-type, all-purpose or taping compound. Fill (Second) Coat: Ready-mixed, drying-type, all-purpose or topping compound. Finish (Third) Coat: Ready-mixed, drying-type, all-purpose or topping compound.

F. For Level 4 gypsum board finish, embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects and ready for decoration.

G. Where Level 1 gypsum board finish is indicated, embed tape in joint compound (above ceilings).

3.10 FIELD QUALITY CONTROL

A. Above-Ceiling Observation: Architect will conduct an above-ceiling observation prior to installation of gypsum board ceilings and report any deficiencies in the Work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.

1. Notify Architect one week in advance of the date and the time when the Project, or part of the Project, will be ready for an above-ceiling observation.
2. Prior to notifying Architect, complete the following in areas to receive gypsum board ceilings:
    a. Installation of 80 percent of lighting fixtures, powered for operation.
    b. Installation, insulation, and leak and pressure testing of water piping systems.
    c. Installation of air duct systems.
    d. Installation of air devices.

e. Installation of mechanical system control air tubing.
f. Installation of ceiling support framing.

3.11 CLEANING AND PROTECTION

A. Promptly remove any residual joint compound from adjacent surfaces.

B. Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure gypsum board assemblies are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 092900

SECTION 092953 - ALUMINUM PARTITION GAP CLOSURE

PART 1 – GENERAL

1.1 SECTION INCLUDES:

A. This section includes drywall accessories or noise control components featuring Mullion Mate® Snap Extruded Aluminum Partition Gap Closure, as shown on the Architectural Drawings.

1.2 RELATED DOCUMENTS/SECTIONS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

B. Section 1 Specification sections as it applies to work of this Section.

1.3 DESIGN/PERFORMANCE REQUIREMENTS:

A. All components of the Mullion Mate® Snap Extruded Aluminum Partition Gap Closure shall be provided by one (1) Manufacturer to ensure single source responsibility and quality control.

B. Partition Gap Closure shall meet specified performance requirements listed in ASTM E1399/E1399M-97 for the joint width minimum and maximum dimension verification as well as the cyclic movement performance for Class IV – Combined movement which encompasses Seismic, Thermal and Wind Sway movement at a cycling rate greater than or equal to 10 cycles per minute.

C. All materials are Class A rated per ASTM E84.

1.4 SUBMITTALS:

A. Product Data: Submit Manufacturer's:
   1. Product Specifications
   2. Detail Drawings
   3. Installation Instructions

B. Samples:
   1. Submit samples consisting of 12" long Mullion Mate® Snap Extruded Aluminum Partition Gap Closure and finish Q-Panel as specified, as well as accessories.

C. Certification: Submit certification from Manufacturer of accessory attesting products comply with specified requirements, including finish as specified.

D. Qualification Data:
   1. Firms specified in "Quality Assurance" Article must demonstrate their capabilities and experience by including lists of completed projects with project names and addresses, names and addresses of Architects and owners, and other information specified.

1.5 QUALITY ASSURANCE:

A. Source Limitations:
   1. All components of the Mullion Mate® Snap Extruded Aluminum Partition Gap Closures shall be provided by a single Manufacturer to ensure responsibility and quality control.

B. Manufacturer's Qualifications:
   1. A manufacturer must have manufacturing and delivery capacity required for the project and shall have successfully completed at least ten (10) projects within the past five (5) years, utilizing systems, materials, and techniques as herein specified.
   2. A manufacturer must own and operate its own manufacturing facilities for all metal components. "Stick Built" or "Kit of Parts Systems" consisting of components from a variety of Manufacturers/Fabricators will not be considered or accepted.
   3. Manufacturer must own and operate its own painting and finishing facility to assure single source responsibility and quality control.

C. Installer Qualifications:
   1. Installers shall have a minimum of five (5) years of experience installing systems of similar type and scope as those specified in this section.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. All materials shall be protected during fabrication, shipment, and installation to prevent damage to the finished work from other trades.

B. To avoid lasting deformation of the Mullion Mate® Snap Extruded Aluminum Partition Gap Closure components when exposed to temperature and humidity extremes, store this material at or near room temperature. Allow a minimum of 48 hours for the product to adjust to internal room temperature and humidity conditions before installing the Mullion Mate® Snap Extruded Aluminum Partition Gap Closure.

C. Store Mullion Mate® Snap Extruded Aluminum Partition Gap Closures inside a well-ventilated area, away from uncured concrete and masonry, and protected from the weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

D. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommend by Manufacturer for optimum results. Do not install products under environmental conditions outside Manufacturer's recommendations.

E. Exercise care in loading, unloading, storing, and installing units to preclude bending, warping, twisting and other surface damage.

1.7 WARRANTY:

A. Extended Workmanship Warranty:
   1. Furnish Manufacturer's Standard Workmanship Warranty (must be requested at time of quotation) may be extended up to a maximum of twenty (20) years from date of material shipment, when installed in accordance with Manufacturer's recommendations.

B. Extended Finish Warranty:
   1. Furnish Manufacturer's Standard Finish Warranty (must be requested at time of quotation) may be extended up to a maximum of twenty (20) years from date of material shipment, when installed in accordance with Manufacturer's recommendations.

1.8 SUBSTITUTIONS:

A. No substitutions are permitted for the Mullion Mate® Snap Extruded Aluminum Partition Gap Closure.

B. Requests for substitutions will be considered in accordance with the provisions of Section 016000. Companies desiring to submit a proposal shall submit all descriptive information of the system proposed including photographs and Shop Drawings of at least ten (10) projects within the past five (5) years, utilizing systems, materials and techniques as herein specified.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Basis-of-Design: Subject to compliance with requirements, provide Mullion Mate® Snap Extruded Aluminum Partition Gap Closures manufactured by Gordon, Inc. For all inquiries contact:

Gordon, Inc.
5023 Hazel Jones Road
Bossier City, LA 71111
(800) 747-8954
sales@mullionmate.com

B. The listed Manufacturer shall not be construed as closing specifications to other prospective Manufacturers, but rather as establishing a level of quality in a metal system. Other systems may be submitted for approval, as provided for in the specifications at least ten (10) working days prior to submission of bids. Companies desiring to submit a proposal shall submit all descriptive information of the system proposed including photographs and Shop Drawings of at least ten (10) projects within the past five (5) years, utilizing systems, materials, and techniques as herein specified.

2.2 MATERIALS:

A. Provide metals free from surface blemishes where exposed to view in finished Mullion Mate® Snap Extruded Aluminum Partition Gap Closures. Surfaces exhibiting pitting, seam marks, roller marks, stains, discolorations, or other imperfections on finished Mullion Mate® Snap Extruded Aluminum Partition Gap Closures are not acceptable. All metal shall be of the highest commercial grade available.

B. Mullion Mate® Snap Extruded Aluminum Partition Gap Closures are factory-assembled, and spring loaded to provide a tight fit for vertical junctures of partitions and window walls.

C. Materials:
   1. Aluminum extrusions: 6063-T5 or T6 temper alloy.
   2. Aluminum sheet, 3000 series alloy.

D. Aluminum extrusions: 6063-T5 or T6 temper, tensile strength 31 KSI (ASTM B 221, ASTM B 221M).

E. Accessories: None.

2.3 FABRICATION:

A. Provide Mullion Mate® Snap Extruded Aluminum Partition Gap Closure in specified lengths and size to fit openings.
Single-Piece construction available in lengths up to sixteen (16) feet. Spliced conditions are available in lengths up to thirty (30) feet.

B. Mullion Mate End Caps; Supply units sized to fit the existing gap between the storefront windows and the interior partitions. Field verify all dimensions prior to ordering and fabrication the closures.

2.4 FINISHES:

A. Comply with the National Association of Architectural Metal Manufacturers (NAAMM) "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

B. All material shall be the following:
1. Factory Anodized
a. Custom color anodized to match the dark bronze finish on the storefront windows.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examination of Surfaces: Installer must examine conditions under which work is to be performed and must notify Contractor in writing of unsatisfactory conditions.

B. Verify that field measurements and block-out dimensions are as shown on Shop Drawings.

3.2 PREPARATION:

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the Manufacturer to achieve the best result for the project conditions.

3.3 INSTALLATION:

A. Mullion Mate® Snap Extruded Aluminum Partition Gap Closures shall be inspected before installation to be free from dents, scratches, and other defects.

B. Install Mullion Mate® Snap Extruded Aluminum Partition Gap Closures in accordance with Manufacturer's written Installation Instructions and Details.

C. Space Enclosure: Do not install any work until space is enclosed and weatherproofed, wet-work in space is completed and nominally dry, work above ceilings is complete, and temperature and humidity shall be continuously maintained at values near those of final occupancy.

3.4 CLEANING:

A. Follow Manufacturer's cleaning instructions for specified finish.

END OF SECTION 092953

SECTION 093013 - CERAMIC TILE

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 the following:

1. Ceramic mosaic tile.
2. Glazed wall tile.
3. Marble thresholds, installed as part of tile installations.

B. Related Sections include the following:

1. Division 3 Section "Cast-in-Place Concrete" for monolithic slab finishes specified for tile substrates.
2. Division 7 Section "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.

1.3 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:

1. Level Surfaces: Minimum 0.6.

1.4 SUBMITTALS

A. Product Data: For each type of tile, mortar, grout, and other products specified.

B. Shop Drawings: For the following:

1. Tile patterns and locations.
2. Widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Tile Samples for Initial Selection: Manufacturer's color charts consisting of actual tiles or sections of tiles showing the full range of colors, textures, and patterns available for each type and composition of tile indicated. Include Samples of accessories involving color selection.

D. Grout Samples for Initial Selection: Manufacturer's color charts consisting of actual sections of grout showing the full range of colors available for each type of grout indicated.

E. Samples for Verification: Of each item listed below, prepared on Samples of size and construction indicated. Where products involve normal color and texture variations, include Sample sets showing the full range of variations expected.

1. Each type and composition of tile and for each color and texture required, provide one full size tile in color or colors selected by Architect.
2. Full-size units of each type of trim and accessory for each color required.
3. Marble thresholds in 6-inch (150-mm) lengths.

F. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

G. Product Certificates: Signed by manufacturers certifying that the products furnished comply with requirements.

H. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names of architects and owners, and other information specified.

I. Tile Test Reports: Indicate and interpret test results for compliance of special-purpose tile with specified requirements.

J. Setting Material Test Reports: Indicate and interpret test results for compliance of tile-setting and -grouting products with specified requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Source Limitations for Tile: Obtain each color, grade, finish, type, composition, and variety of tile from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties without delaying the Work.

C. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

D. Source Limitations for Other Products: Obtain each of the following products specified in this Section from one source and by a single manufacturer for each product:

1. Marble thresholds.
2. Joint sealants.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement of ANSI A137.1 for labeling sealed tile packages.

B. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

C. Handle tile with temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

1.8 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide products indicated in the ceramic tile installation schedules at the end of this Section.

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Tile Products:

a. American Olean Tile Company.
b. Dal-Tile Corporation.
c. Summitville Tiles, Inc.
d. Approved equal.

2. Tile-Setting and -Grouting Materials:

a. American Olean Tile Company.
b. Laticrete International, Inc.
c. Mapei Corporation.
d. Approved equal.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tiles that comply with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

1. Provide tile complying with Standard Grade requirements, unless otherwise indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting Materials" and "Grouting Materials" articles.

C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:

1. Provide Architect's selections from manufacturer's full range of colors, textures, and patterns for products of type indicated.
2. Provide tile trim and accessories that match color and finish of adjoining flat tile.

D. Factory Blending: For tile exhibiting color variations within the ranges selected during Sample submittals, blend tile in the factory and package so tile units taken from one package show the same range in colors as those taken from other packages and match approved Samples.

E. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.3 TILE PRODUCTS

A. Unglazed Ceramic Mosaic Tile: Provide factory-mounted flat tile complying with the following requirements for toilet facilities:

B. Floor Tile:

1. Composition: Porcelain.
2. Module Size: 2 by 2 inches (50.8 by 50.8 mm) in a pattern.
3. Nominal Thickness: 1/4 inch (6.35 mm).
4. Face: Plain with cushion edges.
5. Reference Product: American Olean unglazed ceramic mosaic – Group 1 & 2. (Accent tiles: Groups 1- 4)

C. Glazed Wall Tile: Provide flat tile complying with the following requirements:

1. Module Sie: 4-1/4 by 8-1/2 inches.
2. Thickness: 5/16 inch (8 mm).
3. Face: Plain with cushion edges.
4. Reference Product: American Olean bright and matte glazed wall tile: Price Group 1 & 2.

D. Accent Wall Tile: Provide flat tile complying with the following requirements:

1. Composition: Glass.
2. Module Size: 1 by 1 inch.
3. Nominal Thickness: 5/16 inch.
4. Face: Pattern of design indicated with solids or blends.
5. Reference Product: American Glass Mosaic, Spring Lake, MI or equal product

E. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with the following requirements:

1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
2. Shapes: As follows, selected from manufacturer's standard shapes:
    a. Base for Thin-Set Mortar Installations: Coved.
    b. Base Cap for Thin-Set Mortar Installations: Surface bullnose.
    c. External Corners for Thin-Set Mortar Installations: Surface bullnose.

d. Internal Corners: Field-butted square corners, except with coved base and cap angle pieces designed to member with stretcher shapes.

2.4 MARBLE THRESHOLDS

A. General: Provide stone thresholds that are uniform in color and finish, fabricated to sizes and profiles indicated to provide transition between tile surfaces and adjoining finished floor surfaces.

1. Fabricate thresholds to heights indicated, but not more than 1/2 inch (12.7 mm) above adjoining finished floor surfaces, with transition edges beveled on a slope of no greater than 1:2.

B. Marble Thresholds: Provide marble thresholds complying with ASTM C 503 requirements for exterior use and with a minimum abrasive-hardness value of 10 per ASTM C 241.

1. Provide white, honed marble complying with the Marble Institute of America's Group A requirements for soundness.

2.5 SETTING MATERIALS

A. Portland Cement Mortar Installation Materials: Provide materials complying with ANSI A108.1A and as specified below:

1. Latex additive (water emulsion) described below, serving as replacement for part or all of gaging water, of type specifically recommended by latex additive manufacturer for use with job-mixed portland cement and aggregate mortar bed.

a. Latex Additive: Manufacturer's standard.
b. Latex Additive: tyrene butadiene rubber.
c. Latex Additive: Acrylic resin.

B. Dry-Set Portland Cement Mortar: ANSI A118.1.

1. For wall applications, provide nonsagging, latex-portland cement mortar complying with ANSI A118.4 for mortar of this type defined in Section F-2.1.2.

C. Latex-Portland Cement Mortar: ANSI A118.4, composed as follows:

1. Prepackaged Dry-Mortar Mix: Factory-prepared mixture of portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to which only water needs to be added at Project site.

a. For wall applications, provide nonsagging, latex-portland cement mortar complying with ANSI A118.4 for mortar of this type defined in Section F-2.1.2.

D. Water-Cleanable, Tile-Setting Epoxy Adhesive: ANSI A118.3.

2.6 GROUTING MATERIALS

A. Commercial Portland Cement Grout (Sanded Grout): ANSI A118.6, color as indicated, for joints 1/8 inch (3.2 mm) or wider.

B. Latex-Portland Cement Grout: ANSI A118.6 for materials described in Section H-2.4, composed as follows:

1. Factory-Prepared, Dry-Grout Mixture: Factory-prepared mixture of portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to produce the following:
    a. Sanded grout mixture for joints 1/8 inch (3.2 mm) and wider.
    b. Unsanded grout mixture for joints narrower than 1/8 inch (3.2 mm).

2.7 ELASTOMERIC SEALANTS

A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements of Division 7 Section "Joint Sealants."

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.

C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and temperature extremes.

D. Products: Subject to compliance with requirements, provide one of the following:

1. One-Part, Mildew-Resistant Silicone Sealants:
    a. Dow Corning 786; Dow Corning Corporation.
    b. Pecora 898 Sanitary Silicone Sealant; Pecora Corp.
    c. Tremsil 600 White; Tremco, Inc.

2.8 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Temporary Protective Coating: Provide product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; is compatible with tile, mortar, and grout products; and is easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F (49 to 60 deg C) per ASTM D 87.
2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as a temporary protective coating for tile.

C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

2.9 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

2.10 CRACK PREVENTION AND WATER PROOFING MEMBRANE

A. Ceramic Tile Underlayment: Manufactured by Custom Building Products, RedGard Crack Prevention and Waterproofing Membrane.

1. Anti-crack Mesh: Waterproofing and anti-fracture membrane mesh.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm; dry; clean; free from oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 series of tile installation standards for installations indicated.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove coatings, including curing compounds, and other substances that contain soap, wax, oil, or silicone and are incompatible with tile-setting materials by using a terrazzo or concrete grinder, a drum sander, or a polishing machine equipped with a heavy-duty wire brush.

B. Provide concrete substrates for tile floors installed with dry-set or latex-portland cement mortars that comply with flatness tolerances specified in referenced ANSI A108 series of tile installation standards for installations indicated.

1. Use trowelable leveling and patching compounds per tile-setting material manufacturer's written instructions to fill cracks, holes, and depressions.
2. Remove protrusions, bumps, and ridges by sanding or grinding.

C. Blending: For tile exhibiting color variations within the ranges selected during Sample submittals, verify that tile has been blended in the factory and packaged so tile units taken from one package show the same range in colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION, GENERAL

A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 series of tile installation standards in "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated.

1. Ceramic floor tile: TCA Method F-113
2. Ceramic wall tile: TCA Method W-202

B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.

C. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

E. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are the same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.

F. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Locate joints in tile surfaces directly above joints in concrete substrates.
2. Prepare joints and apply sealants to comply with requirements of Division 7 Section "Joint Sealants."

G. Grout tile to comply with the requirements of the following tile installation standards:

1. For ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement grouts), comply with ANSI A108.10.

3.4 FLOOR TILE INSTALLATION

A. General: Install tile to comply with requirements in the Ceramic Tile Floor Installation Schedule, including those referencing TCA installation methods and ANSI A108 series of tile installation standards.

B. Tile Pattern: All ceramic mosaic floors to use American Olean 2 x 2 pattern SP-8205.

C. Joint Widths: Install tile on floors with the following joint widths:

1. Ceramic Mosaic Tile: 1/16 inch (1.6 mm).

D. Marble Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.

3.5 WALL TILE INSTALLATION

A. Install types of tile designated for wall installations to comply with requirements in the Ceramic Tile Wall Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.

B. Joint Widths: Install tile on walls with the following joint widths:

1. Wall Tile: 1/16 inch (1.6 mm).

C. Back Buttering: For installations indicated, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:

1. Tile wall installations in wet areas, including showers.

3.6 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove latex-portland cement grout residue from tile as soon as possible.
2. Unglazed tile may be cleaned with acid solutions only when permitted by tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after cleaning.
3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure tile is without damage or deterioration at the time of Substantial Completion.

1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 093013

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes ceilings consisting of acoustical panels and exposed suspension systems.

1.3 SUBMITTALS

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

B. Samples: Submit product samples for each material specified.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels and suspension system components to Project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.6 COORDINATION

A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.

1. Acoustical Ceiling Units: One carton of each size and pattern.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated for each designation in the Acoustical Panel Ceiling Schedule at the end of Part 3.

2.2 ACOUSTICAL PANELS, GENERAL

A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.

1. Mounting Method for Measuring Noise Reduction Coefficient: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface per ASTM E 795.

B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.

C. Antimicrobial Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial solution consisting of a synergistic blend of substituted ammonium salts of alkylated phosphoric acids admixed with free alkylated phosphoric acid that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria.

D. Panel Characteristics: Comply with requirements indicated in the Acoustical Panel Ceiling Schedule at the end of Part 3, including those referencing ASTM E 1264 classifications.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements.

B. Metal Suspension System Characteristics: Comply with requirements indicated in the Acoustical Panel Ceiling Schedule at the end of Part 3.

C. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.

D. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated.

E. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:

1. Zinc-Coated Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, Direct Hung) will be less than yield stress of wire but provide not less than 0.106-inch- (2.69-mm) diameter wire.

F. Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit acoustical panel edge details and suspension systems indicated; formed from sheet metal of same material and finish as that used for exposed flanges of suspension system runners.

1. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage, and other conditions affecting performance of acoustical panel ceilings.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install acoustical panel ceilings to comply with publications referenced below per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

1. Standard for Ceiling Suspension System Installations: Comply with ASTM C 636.

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure; that are appropriate for substrate; and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, powder-actuated fasteners, or drilled-in anchors that extend through forms into concrete.
6. Do not attach hangers to steel deck tabs.
7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
8. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise indicated; and provide hangers not more than 8 inches (200 mm) from ends of each member.

C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m). Miter corners accurately and connect securely.
2. Do not use exposed fasteners, including pop rivets, on moldings and trim.

D. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

E. Install acoustical panels with undamaged edges and fitted accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

1. Arrange directionally patterned acoustical panels as follows:

a. As indicated on reflected ceiling plans.

2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. Paint cut panel edges remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

F. Install hold-down clips in the areas of the building as noted on the Room Finish Schedule. Clips shall be as recommended by the suspension system manufacturer and shall fit tightly over the "Tee" members of the system.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified independent testing agency to perform field quality-control testing.

B. Extent and Testing Frequency: Testing will take place in successive stages in areas described below. Proceed with installation of acoustical panel ceilings only after test results for previously installed hangers comply with requirements.

C. Testing agency will report test results promptly and in writing to Contractor and Architect.

D. Remove and replace those fasteners and anchors that test results indicate do not comply with specified requirements.

E. Additional Testing: Where fasteners and anchors are removed and replaced, additional testing will be performed to determine compliance with specified requirements.

3.4 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.5 ACOUSTICAL PANEL CEILING SCHEDULE

A. Water-Felted, Mineral-Base Acoustical Panels for Acoustical Panel Ceiling APC-A: Where Type A - 2' by 2' panels are indicated, provide acoustical panels, treated with antimicrobial solution, and complying with the following:

1. Products: Provide the following or approved equal:
   a. Fine Fissured – Square Lay-in by Armstrong – Item #1728
2. Classification: Panels fitting ASTM E 1264 for Type III, mineral base with painted finish; Form 2, water felted.
3. Pattern: Panels fitting ASTM E 1264 pattern designation CEK
4. Color: White
5. Light Reflectance Coefficient: Not less than 0.85.
6. Noise Reduction Coefficient: NRC 0.50.
7. Ceiling Attenuation Class: Not less than CAC 35.
8. Edge Detail: square.
9. Thickness: 3/4 inch (15 mm).
10. Size: 24 by 24 inches (600 by 600 mm).

B. Suspension Systems for Acoustical Panel Ceilings: Where this designation is indicated, provide acoustical panel ceiling suspension system complying with the following:

1. Products: Provide one of the following or approved equal:
   a. Prelude exposed tee system
2. Wide-Face, Single-Web, Steel Suspension System for all locations unless otherwise noted: Main and cross runners roll formed from cold-rolled steel sheet electrolytically zinc coated, with prefinished 15/16-inch- (24-mm-) wide flanges; other characteristics as follows: (Reference Product: Armstrong Prelude ML)
   a. Structural Classification: Heavy-duty system.
   b. Face Finish: Painted white.

END OF SECTION 095113

SECTION 096519 - RESILIENT TILE FLOORING

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 the following:

1. Vinyl composition floor tile.
2. Resilient wall base and accessories.

1.3 SUBMITTALS

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

B. Maintenance Data: For resilient floor tile to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing resilient products similar to those required for this Project and with a record of successful in-service performance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to Project site in manufacturer's original, unopened cartons and containers, each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.

B. Store products in dry spaces protected from the weather, with ambient temperatures maintained between 50 and 90 deg F (10 and 32 deg C).

C. Store tiles on flat surfaces.

D. Move products into spaces where they will be installed at least 48 hours before installation, unless longer conditioning period is recommended in writing by manufacturer.

1.6 PROJECT CONDITIONS

A. Maintain a temperature of not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C) in spaces to receive products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods. After postinstallation period, maintain a temperature of not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

B. Do not install products until they are at the same temperature as the space where they are to be installed.

C. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.

D. Install tiles and accessories after other finishing operations, including painting, have been completed.

E. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.

1. Furnish one box for each color selected.
2. Deliver extra materials to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the Resilient Tile Flooring Schedule at the end of Part 3.

2.2 RESILIENT ACCESSORIES

A. Rubber Wall Base: Products complying with FS SS-W-40, Type I and with requirements specified in the Resilient Tile Flooring Schedule.

B. Rubber Accessory Moldings: Products complying with requirements specified in the Resilient Tile Flooring Schedule.

2.3 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by flooring manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Metal Edge Strips: Extruded Aluminum with mill finish of width shown, or height required to protect exposed edges of tiles, and in maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by flooring manufacturer.
2. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving resilient flooring.

C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with resilient product manufacturer's written installation instructions for preparing substrates indicated to receive resilient products.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

1. All existing floors where the covering has been removed shall be flash patched prior to the installation of the new resilient tile.

C. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION

A. General: Comply with tile manufacturer's written installation instructions.

B. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half of a tile at perimeter.

1. Lay tiles square with room axis, unless otherwise indicated.

C. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Cut tiles neatly around all fixtures. Discard broken, cracked, chipped, or deformed tiles.

1. Lay tiles with grain running in one direction.
2. Lay tiles in pattern of colors and sizes indicated on Drawings.

D. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

E. Extend tiles into toe spaces, door reveals, closets, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other nonpermanent, nonstaining marking device.

G. Install tiles on covers for telephone and electrical ducts, and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers. Tightly adhere edges to perimeter of floor around covers and to covers.

H. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to comply with tile manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.

1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

I. Hand roll tiles according to tile manufacturer's written instructions.

3.4 RESILIENT ACCESSORY INSTALLATION

A. General: Install resilient accessories according to manufacturer's written installation instructions.

B. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

1. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
2. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
3. Do not stretch base during installation.
4. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
5. Form outside corners on job from straight pieces of maximum lengths possible, without whitening at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
6. Form inside corners on job, from straight pieces of maximum lengths possible, by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.

C. Place resilient accessories so they are butted to adjacent materials and bond to substrates with adhesive. Install reducer strips at edges of flooring that would otherwise be exposed.

3.5 CLEANING AND PROTECTING

A. Perform the following operations immediately after installing resilient products:

1. Remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.
2. Sweep or vacuum floor thoroughly.

3. Do not wash floor until after time period recommended by flooring manufacturer.
4. Damp-mop floor to remove marks and soil.

B. Protect flooring against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by flooring manufacturer.

1. Apply protective floor polish to floor surfaces that are free from soil, visible adhesive, and surface blemishes, if recommended in writing by manufacturer.

   a. Use commercially available product acceptable to flooring manufacturer.
   b. Coordinate selection of floor polish with Owner's maintenance service.

2. Cover products installed on floor surfaces with undyed, untreated building paper until inspection for Substantial Completion.
3. Do not move heavy and sharp objects directly over floor surfaces. Place plywood or hardboard panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

C. Clean floor surfaces not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Clean products according to manufacturer's written recommendations.

1. Before cleaning, strip protective floor polish that was applied after completing installation only if required to restore polish finish and if recommended by flooring manufacturer.
2. After cleaning, reapply polish to floor surfaces to restore protective floor finish according to flooring manufacturer's written recommendations. Coordinate with Owner's maintenance program.

3.6 RESILIENT TILE FLOORING SCHEDULE

A. Vinyl Composition Tile (VCT): Where this designation is indicated, provide vinyl composition floor tile complying with the following:

1. Products: As follows:

   a. Reference Product: Standard Excelon Vinyl Composition Tile, Multi-color and Imperial texture by Armstrong World Industries.

2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for tile complying with requirements indicated. Note Pattern for Entry B-101 on drawings. Random patterns may be used in other rooms and corridors.
3. Class 2 (through-pattern tile).
4. Wearing Surface: Smooth
5. Thickness: 1/8 inch (3.2 mm).
6. Size: 12 by 12 inches (304.8 by 304.8 mm).

B. Rubber Wall Base (RWB): Where this designation is indicated, provide rubber wall base complying with the following:

1. Products: As follows:

   a. Reference Product: Type TS extruded rubber cove base by Roppe Corp.

2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for rubber wall base complying with requirements indicated.
3. Style: [Cove with top-set toe.]

4. Minimum Thickness: 1/8 inch (3.2 mm).
5. Height: 4 inches (101.6 mm). 6 inches (152.4 mm where indicated
6. Lengths: Cut lengths 48 inches (1219.2 mm) long
7. Outside Corners:Job formed.
8. Inside Corners: Job formed.
9. Surface: Smooth.

END OF SECTION 096519

SECTION 096723 – RESINOUS EPOXY FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes one resinous flooring system, one with epoxy body with integral cove base.

1. Application Method: Metal, power or hand troweled.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.

B. Samples for Verification: For each resinous flooring system required, 6 inches (150 mm) square, applied to a rigid backing by Installer for this Project.

C. Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in product schedule.

D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

E. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. No request for substitution shall be considered that would change the generic type of floor system specified (i.e. epoxy mortar based system with decorative quartz topping). Equivalent materials of other manufactures may be substituted only on approval of Architect or Engineer. Request for substitution will only be considered only if submitted 10 days prior to bid date. Request will be subject to specification requirements described in this section.

B. Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.

1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
2. Contractor shall have completed at least 10 projects of similar size and complexity.

C. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this section. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.

D. Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.

1. Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

E. Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Apply full-thickness mockups on 36-inch- (900-mm-) square floor area selected by Architect.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Pre-installation Conference:

1. General contractor shall arrange a meeting not less than thirty days prior to starting work.
2. Attendance:
    a. General Contractor
    b. Architect/Owner's Representative.
    c. Manufacturer/Installer's Representative.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with unbroken seals, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

B. Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

C. All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.

1. Maintain material and substrate temperature between 65 and 85 deg F (18 and 30 deg C) during resinous flooring application and for not less than 24 hours after application.

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

D. Concrete substrate shall be properly cleaned and prepped in accordance with the manufacturer's requirements. The flooring contractor shall apply an osmotic pressure resistant grout to the slab surface prior to the resinous flooring.

1.7 WARRANTY

A. Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of (1) full years from date of installation, or provide a joint and several warranty signed on a single document by material manufacturer and applicator jointly and severally warranting the materials and workmanship for a period of (1) full year from date of installation. A sample warranty letter must be included with bid package or bid may be disqualified.

PART 2 - PRODUCTS

2.1 RESINOUS FLOORING

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include,

1. Must comply with troweled mortar base with broadcast topping. Liquid rich, slurry type systems will not be accepted, and will result in a disqualification from bid.

B. Acceptable Manufactures,

1. Palma, Inc., Basis of design.
2. Equal approved system.

C. Products: Subject to compliance with requirements:

1. Palma, Inc.; Palikrom 125.

D. System Characteristics:

1. Color and Pattern: Choose from Mfg. Standards
2. Wearing Surface: Medium.
3. Overall System Thickness: nominal 1/8"

E. System Components: Manufacturer's standard components that are compatible with each other and as follows:

1. Membrane bodycoat:
   a. Material design basis: Palamlite Palikrom 125
   b. Resin: Epoxy.
   c. Formulation Description: 1 part hardener, 2 parts resin.
   d. Application Method: Metal Trowel.
      1) Thickness of Coats: nominal 1/8" (inch).
      2) Number of Coats: One.
   e. Aggregates: Broadcast silica aggregate.
   f. Apply matching cove base.

2. Broadcast Media:

   a. Material Basis: 3M Colorquartz.
   b. Type: pigmented.
   c. Finish: standard.
   d. Number of Coats: one.
   e. Pattern: Tweed.

3. Sealer:

   a. Material Basis: Palmalite clear topcoat.
   b. Type: Clear.
   c. Finish: Gloss.
   d. Number of Coats: two.
   e. Texture level: Medium.

4. Additional Topcoat: Clear polyurethane, one coat.

F. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

1. Compressive Strength: 13,500 psi after 7 days per ASTM C 579.
2. Tensile Strength: 1.790 psi per ASTM C 307.
3. Flexural Strength: 5,030 psi per ASTM C 580.
4. Water Absorption: .37% per ASTM C 413.
5. Resistance to impact: 10 mils.
6. Flammability: Self extinguishing.
7. Hardness: Average 83, Shore D per ASTM D 2240.

2.2 ACCESSORY MATERIALS

A. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

B. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated. Allowances should be included for Stonflex MP7 joint fill material, and CT5 concrete crack treatment.

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Prepare and clean the existing concrete substrate according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral Ph substrate for resinous flooring application.

B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring. New concrete to receive resinous flooring to have a light broom finish.

1. Mechanically prepare substrates as follows:

a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
b. Comply with ASTM C 811 requirements, unless manufacturer's written instructions are more stringent.

2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
3. Verify that concrete substrates are dry.
   a. Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 75 percent.
   b. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. of slab in 24 hours.
   c. Perform additional moisture tests recommended by manufacturer. Proceed with application only after substrates pass testing.
4. Verify that concrete substrates have neutral Ph and that resinous flooring will adhere to them. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.

D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.

E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances should be included for Stonflex MP7 joint fill material, and CT5 concrete crack treatment.

3.2 APPLICATION

A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated with integral 4" cove base.

1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
   a. Apply joint sealant to comply with manufacturer's written recommendations.

B. Apply metal trowel single mortar coat in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When cured, sand to remove trowel marks and roughness.

C. Undercoat: Remove any surface irregularities by lightly abrading and vacuuming the floor surface. Mix and apply undercoat with strict adherence to manufacturer's installation procedures and coverage rates.

D. Broadcast: Immediately broadcast quartz silica aggregate into the undercoat using manufacturer's specially designed spray caster. Strict adherence to manufacturer's installation procedures and coverage rates is imperative.

E. Apply topcoat(s) in number of coats indicated for flooring system and at spreading rates recommended in writing by manufacturer.

3.3 TERMINATIONS

A. Chase edges to "lock" the flooring system into the concrete substrate along lines of termination.

B. Penetration Treatment: Lap and seal resinous system onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.

C. Trenches: Continue flooring system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.

D. Treat floor drains by chasing the flooring system to lock in place at point of termination.

E. Provide an edge stop for the flooring system to create the recesses for the walk-off mats. See the plan for location and sizes of the recesses.

3.4 JOINTS AND CRACKS

A. Treat control joints to bridge potential cracks and to maintain monolithic protection.

B. Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.

C. Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3.5 FIELD QUALITY CONTROL

A. Material Sampling: Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements.

1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.6 CLEANING, PROTECTING, AND CURING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.

B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.

C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

END OF SECTION 096723

SECTION 096813 – CARPET TILE

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 the following:

1. Carpet tile.

B. Related Sections include the following:

1. Division 9 Section "Resilient Tile Flooring" for resilient wall base and accessories installed with carpet tile.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate required.

B. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet tile: Two (2) full tile.
2. Exposed Edge Stripping and Accessory: 12-inch- (300-mm-) long Samples.

C. Maintenance Data: For carpet to include in maintenance manuals specified in Division 1. Include the following:

1. Methods for maintaining carpet, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.

B. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated in Part 2, as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

C. Product Options: Products and manufacturers named in Part 2 establish requirements for product quality in terms of appearance, construction, and performance. Other manufacturers' products comparable in quality to named products and complying with requirements may be considered. Refer to Division 1 Section "Substitutions."

1.5 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with CRI 104, Section 5, "Storage and Handling."

1.6 PROJECT CONDITIONS

A. General: Comply with CRI 104, Section 6.1, "Site Conditions; Temperature and Humidity."

B. Do not install carpet over the existing concrete slabs until slabs have been cleaned and prepped as recommended by carpet manufacturer.

1.7 WARRANTY

A. Special Carpet Warranty: Written warranty, signed by carpet manufacturer agreeing to replace carpet that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.

1. Warranty Period: Fifteen (15) years from date of Substantial Completion.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Carpet Tile: One (1) box of each color selected.

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Available Product[s]: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

B. Product: Subject to compliance with requirements, provide the following or approved equal:

1. Field Day 03377, Modular Tile as manufactured by C&A, a Tandus Company.
   a. Color: As selected by Architect from manufacturer's full range

C. Face Construction: Level-loop pile, Accuweave Patterned Loop, & Stratatec Patterned Loop

D. Gauge: 5/64, 1/12 & 1/13 (50.4 rows/10cm.

E. Stitches: 8.4 - 12.5 per inch (39.4 pu/10 cm).

F. Pile Height: 0.117 – 0.187 inch,(3.0 mm) for finished carpet per ASTM D 418.

G. Total Weight: 119.1 (117.7) oz / sq yd +/-5%, 4039 (3991) g/sq m.

H. Primary Backing: Non-woven synthetic fiber.

I. Secondary Backing: Flex-Aire Cushion Modular.

J. Size: 24"x 24".

K. Dye Method: Solution Dyed

L. Performance Characteristics:

1. Dry Breaking Strength: Not less than 100 lbf (445 N) per ASTM D 2646.
2. Resistance to Insects: Comply with AATCC-24.
3. Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) per AATCC-16.
4. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria; not less than 1-mm halo of inhibition for gram-negative bacteria; no fungal growth; per AATCC-174.

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided by or recommended by the following:

1. Carpet manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, non-staining type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet and that is recommended by the following:

1. Carpet manufacturer.

C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance. Verify that substrates and conditions are satisfactory for carpet installation and comply with requirements specified.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by the following:

a. Carpet manufacturer.

2. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving carpet.
3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and carpet manufacturer's written installation instructions for preparing substrates indicated to receive carpet installation.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by the following:

1. Carpet manufacturer.

D. Broom and vacuum clean substrates to be covered immediately before installing carpet. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

A. Carpet tile and Walk-off tile to have Preapplied Adhesive Installation: Comply with CRI 104, Section 10.4, "Pre-Applied Adhesive Systems (Peel and Stick)."

B. Comply with carpet manufacturer's written recommendations for direction of carpet tile; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under the door in closed position.

1. Level adjoining border edges.

C. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.

D. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

E. Install pattern parallel to walls and borders.

3.4 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet:

1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
2. Remove yarns that protrude from carpet surface.
3. Vacuum carpet using commercial machine with face-beater element.

B. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

END OF SECTION 096813

SECTION 099000 - PAINTING

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 surface preparation and field painting of the following:

1. Exposed exterior items and surfaces.
2. Exposed interior items and surfaces.
3. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

D. Related Sections include the following:List below contains items that are usually shop primed and materials that might be specified in this Section. Revise to suit the Project. Verify that Section titles listed below are correct for this Project's Specifications.

1. Division 8 Section "Steel Frames" for shop priming steel frames.
2. Division 9 Section "Gypsum Board Assemblies" for surface preparation for gypsum board.

1.3 SUBMITTALS

A. Product Data: For each paint system specified. Include block fillers and primers.

1. Submit manufacturer's literature including descriptive and performance date.
2. Submit application instructions and methods, including mixing, surface preparation, compatible primers and topcoats, recommended wet and dry film thickness.
3. Submit material safety data sheets (MSDS) for each product.
4. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated, if not indicated on Color Schedule.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, with the following information.

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 PROJECT CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F (10 and 32 deg C).

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F (7.2 and 35 deg C).

C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.7 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

1. Quantity: Furnish the Owner with an additional 5 percent, but not less than 1 gal. (3.785 L) or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products by Sherwin-Williams, Inc. are the basis of design and set the standard of quality required.

B. Substitutions: Equivalent products of other manufacturers may be submitted for approval providing the products submitted are of the same types, have label analyses similar to those specified, meet or exceed the performance criteria, and are suitable for the use intended.

C. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: Match colors indicated by reference to manufacturer's color designations.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.

1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.

1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime.
2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

    a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
    b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
    c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.

3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

    a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
    b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
    c. When transparent finish is required, back prime with spar varnish.
    d. Back prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
    e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.

    a. Blast steel surfaces clean as recommended by paint system manufacturer and according to requirements of SSPC-SP 10.
    b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
    c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Use only thinners approved by paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint colors, surface treatments, and finishes are indicated in the schedules.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
3. Provide finish coats that are compatible with primers used.
4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts with flat, non-specular black paint where visible through registers or grilles.
7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
10. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Omit primer on metal surfaces that have been shop primed and touchup painted.
3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and in occupied spaces.

F. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

G. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

H. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

I. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

J. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.6 EXTERIOR PAINT SCHEDULE

A. Metal: Aluminum, Galvanized.

1. Latex Systems:

a. Satin Finish.

1) 1st Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).

B. Metal: Misc. Iron, Ornamental Iron, Structural Iron and Steel, Ferrous Metal.

1. Latex Systems:

a. Semi-Gloss Finish.

1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).

3.7 INTERIOR PAINT SCHEDULE

A. Masonry: CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted

1. Latex Systems:

a. Eg-Shel / Satin Finish Formaldehyde and Odor Reducing:

1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
2) 2nd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series.
3) 3rd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series (4 mils wet, 1.7 mils dry per coat).

2. Acrylic Epoxy:

a. Filler:

1) Loxon Block Surfacer

b. Finish coats:

1) Two (2) coats Pro-Industrial Pre-Catalyzed Acrylic Epoxy

B. Drywall and Plaster: (Walls, Ceilings, Gypsum Board and similar items):

1. Latex Systems:

a. Eg-Shel / Satin Finish:
   1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
   2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series.
   3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series (4 mils wet, 1.7 mils dry).

2. Acrylic Epoxy:

   a. Primer:
      1) 1 coat Multi Purpose Latex Interior/Exterior Primer Sealer
   b. Finish:
      1) Two (2) Coats, Pro Industrial Waterbased Catalyzed Epoxy Egshel

C. Wood: (Walls, Ceilings, Doors, Trim)

1. Latex Systems:

   a. Semi-Gloss Finish:
      1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
      2) 2nd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series.
      3) 3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series (4 mils wet, 1.3 mils dry per coat).
   b. Stain and Varnish System: Satin Finish:
      1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
      2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
      3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).

D. Metal: Aluminum, Galvanized.

1. Latex Systems:

   a. Semi-Gloss Finish High Performance:
      1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
      2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
      3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
   b. Where noted, this paint shall be applied electrostatically to the existing lockers as an alternate bid price, see drawings for the scope;
      1) Prep the metal surface to remove all areas of damaged paint and smooth the surface where there are missing areas of finish paint.
      2) Apply the new paint in a smooth layer of new paint.
      3) Submit materials and process the Architect and Owner for approval.

END OF SECTION 099000

SECTION 102113.19 - TOILET COMPARTMENTS

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 toilet compartments and screens as follows:

1. Type: Solid-plastic, polymer resin.
2. Compartment Style: Overhead braced and floor anchored.
3. Vanity counters in the toilet rooms.

B. Related Sections include the following:

1. Division 10 "Toilet and Bath Accessories" for toilet paper holders, grab bars, purse shelves, and similar accessories.

1.3 SUBMITTALS

A. Product Data: For each type and style of toilet compartment and screen specified. Include details of construction relative to materials, fabrication, and installation. Include details of anchors, hardware, and fastenings.

B. Shop Drawings: For fabrication and installation of toilet compartment and screen assemblies. Include plans, elevations, sections, details, and attachments to other work.

1. Show locations of reinforcement and cutouts for compartment-mounted toilet accessories.

C. Samples for Initial Selection: Manufacturer's color charts consisting of sections of actual units showing the full range of colors, textures, and patterns available for each type of compartment or screen indicated.

D. Samples for Verification: Of each compartment or screen color and finish required, prepared on 6-inch-(150-mm-) square Samples of same thickness and material indicated for Work.

1.4 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions in areas of installation by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating units without field measurements. Coordinate supports, adjacent construction, and fixture locations to ensure actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Santana Products, Inc
2. Capitol Partitions, Inc.
3. General Partitions Mfg. Corp.

2.2 MATERIALS

A. General: Provide materials that have been selected for surface flatness and smoothness. Exposed surfaces that exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are unacceptable.

B. Solid-Plastic, Polymer Resin: High-density polyethylene (HDPE) with homogenous color throughout. Provide material not less than 1 inch (25 mm) thick with seamless construction and eased edges in color and pattern as follows:

1. Color and Pattern:, One color and pattern in each room as selected by Architect from manufacturer's full range of colors and patterns.

C. Pilaster Shoes and Sleeves (Caps): ASTM A 666, Type 302 or 304 stainless steel, not less than 0.0312 inch (0.8 mm) thick and 3 inches (75 mm) high, finished to match hardware.

1. For solid-plastic, polymer-resin pilasters, in lieu of stainless-steel pilaster shoes and sleeves, manufacturer's standard plastic pilaster shoes and sleeves may be provided.

D. Full-Height (Continuous) Brackets: Manufacturer's standard design for attaching panels and screens to walls and pilasters of the following material:

1. Material: Clear-anodized aluminum.

E. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories of the following material:

1. Material: Stainless steel.

F. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with anti-grip profile in manufacturer's standard finish.

G. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match hardware, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use hot-dip galvanized or other rust-resistant, protective-coated steel.

2.3 FABRICATION

A. General: Provide standard doors, panels, screens, and pilasters fabricated for compartment system. Provide units with cutouts and drilled holes to receive compartment-mounted hardware, accessories, and grab bars, as indicated.

B. Solid-Plastic, Polymer-Resin Compartment, Screens and Vanities: Provide aluminum heat-sink strips at exposed bottom edges of HDPE units to prevent burning.

1. Vanities shall have an apron, backsplash and end bracing panels.

C. Overhead-Braced-and-Floor-Anchored Compartments: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, fasteners, and anchors at pilasters to suit floor conditions. Make provisions for setting and securing continuous head rail at top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.

D. Doors: Unless otherwise indicated, provide 24-inch- (610-mm-) wide in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide out-swinging doors with a minimum 32-inch- (813-mm-) wide clear opening for compartments indicated to be handicapped accessible.

1. Hinges: Manufacturer's standard self-closing type that can be adjusted to hold door open at any angle up to 90 degrees.
2. Latch and Keeper: Manufacturer's standard surface-mounted latch unit with combination rubber-faced door strike and keeper designed for emergency access. Provide units that comply with accessibility requirements of authorities having jurisdiction at compartments indicated to be handicapped accessible.
3. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent door from hitting compartment-mounted accessories.
4. Door Bumper: Manufacturer's standard rubber-tipped bumpers at out-swinging doors or entrance screen doors.
5. Door Pull: Manufacturer's standard unit that complies with accessibility requirements of authorities having jurisdiction at out-swinging doors. Provide units on both sides of doors at compartments indicated to be handicapped accessible.

E. Vanity Tops: Fabricate vanity units as detailed and sized on the drawings, units to be complete with all cut-outs for the sinks and underneath bracing supports.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, plumb, and level. Provide clearances of not more than 1/2 inch (13 mm) between pilasters and panels and not more than 1 inch (25 mm) between panels and walls. Secure units in position with manufacturer's recommended anchoring devices.

B. Overhead-Braced-and-Floor-Anchored Compartments: Secure pilasters to floor and level, plumb, and tighten. Secure continuous head rail to each pilaster with not less than 2 fasteners. Hang doors and adjust so tops of doors are parallel with overhead brace when doors are in closed position.

3.2 ADJUSTING AND CLEANING

A. Hardware Adjustment: Adjust and lubricate hardware according to manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and swing doors in entrance screens to return to fully closed position.

B. Provide final protection and maintain conditions that ensure toilet compartments and screens are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 102113.19

SECTION 102800 – TOILET and BATH ACCESSORIES

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 the following:

1. Toilet/Bath accessories.
2. Underlavatory guards.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.

B. Samples: For each accessory item to verify design, operation, and finish requirements.

1. Approved full-size Samples will be returned and may be used in the Work.

C. Setting Drawings: For cutouts required in other work; include templates, substrate preparation instructions, and directions for preparing cutouts and installing anchoring devices.

D. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Use designations indicated in the Toilet and Bath Accessory Schedule and room designations indicated on Drawings in product schedule.

1.4 QUALITY ASSURANCE

A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.

B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.

1. Products of other manufacturers with equal characteristics, as judged solely by Architect, may be provided.

1.5 COORDINATION

C. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.

D. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.6 WARRANTY

A. General Warranty: Special warranty 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. Manufacturer's Mirror Warranty: Written warranty, executed by mirror manufacturer agreeing to replace mirrors that develop visible silver spoilage defects within minimum warranty period indicated.

1. Minimum Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide accessories by one of the following:

1. Toilet Accessories:

a. American Specialties, Inc.
b. Bobrick Washroom Equipment, Inc.
c. Bradley Corporation.

2. Underlavatory Guards:

a. Brocar Products, Inc.
b. Truebro, Inc.

B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the Toilet and Bath Accessory Schedule at the end of Part 3.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.

B. Brass: STM B 19, leaded and unleaded flat products; ASTM B 16 (ASTM B 16M), rods, shapes, forgings, and flat products with finished edges; ASTM B 30, castings.

C. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch (0.9-mm) minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.

D. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 (Z180).

E. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service), nickel plus chromium electrodeposited on base metal.

F. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.

G. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.

H. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

I. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

A. General: One, maximum 1-1/2-inch- (38-mm-) diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of accessories. On interior surface not exposed to view or back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.

B. General: Names or labels are not permitted on exposed faces of accessories. On interior surface not exposed to view or on back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.

C. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.

D. Recessed Toilet Accessories: Unless otherwise indicated, fabricate units of all-welded construction, without mitered corners. Hang doors and access panels with full-length, stainless-steel hinge. Provide anchorage that is fully concealed when unit is closed.

E. Framed Glass-Mirror Units: Fabricate frames for glass-mirror units to accommodate glass edge protection material. Provide mirror backing and support system that permits rigid, tamper-resistant glass installation and prevents moisture accumulation.

1. Provide galvanized steel backing sheet, not less than 0.034 inch (0.85 mm) and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.

F. Mirror-Unit Hangers: Provide mirror-unit mounting system that permits rigid, tamper- and theft-resistant installation, as follows:

1. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
2. Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.

G. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.

C. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET ACCESSORY SCHEDULE: .

A. Toilet Tissue Dispensers:

1. Bobrick, Model B-7686
2. Surface mounted in each bathroom and Toilet stall

B. Soap Dispensers: Supply the following:

1. Bobrick Model, B-828
2. Counter mounter, one (1) at each sink, polished chrome

C. Paper Towel Dispensers: Provide the following:

1. Products: Provide the following:
2. Recessed Type: Semi-recessed mounted unit.
    a. Reference Product: B-3944 by Bobrick
    b. Towel dispenser with waste receptacle.

D. Grab Bars: Provide stainless-steel grab bar complying with the following:

1. Products: Provide the following:
2. Stainless-Steel
    a. Reference Product: B-6806 Series by Bobrick
    b. Sizes as indicated on the plans.
3. Mounting: Concealed with manufacturer's standard flanges and anchors.
4. Gripping Surfaces: Smooth, satin finish.
5. Outside Diameter: 1-1/2 inches (38 mm) for heavy-duty applications.

E. Shower Curtain Rods:

1. Products: Provide the following;
2. Stainless-steel:
    a. Reference Product; B-6047 Series by Bobrick

b. Sizes as indicated on the plans.

3. Mounting; Concealed attachments to the stall side walls.
4. Material: Type 302 SS satin finish, 18 ga., 1¼ inch diameter.
5. Curtain: Provide opaque, matte white vinyl curtains, 42" w x 72" long.
6. Hooks: Include shower curtain hooks with roller balls for easy sliding.

F. Towel Hooks:

1. Provide: Product as follows;
2. Stainless-steel:

a. Reference Product; B-76727 Series by Bobrick
b. Double hook, one per each shower stall.

3. Mounting: Concealed attachment to the shower stall wall.

G. Shelf:

1. Provide: Product as follows;
2. Stainless-steel:

a. Reference Product; B-295 Series by Bobrick
b. Shelf, one per each shower stall.

3. Mounting: 16-gauge (1.6mm) stainless steel with satin finish.

H. Coat Hooks:

1. Provide: Product as follows;
2. Stainless-steel:
   a. Reference Product; Ambipolar Premium Heavy Duty Big Single Prong Coat Hooks
   b. Double hook, one per each toilet stall.
3. Mounting: Concealed attachment to the toilet stall doors.

I. Mirror Unit: Provide the following:

1. Products: Provide the following for the public toilet room:
2. Stainless-Steel, Channel-Framed Mirror:

a. Reference Products: B-292 by Bobrick.
b. Size to be 18" x 30" or as indicated.

J. Underlavatory Guard: Provide underlavatory guard complying with the following:

1. Products: Provide the following for the public toilet rooms and the handicapped accessible units:
2. Insulating Piping Coverings: White, antimicrobial, molded-vinyl covering for supply and drain piping assemblies intended for use at accessible lavatories. Provide components as required for applications indicated with flip tops at valves that allow service access without removing coverings.

a. Reference Product: Model 103 Lav-Guard by TrueBro Inc.

3. Coordinate with plumbing contractor.

END OF SECTION 102800

SECTION 102810- ELECTRIC HAND DRYERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Warm air, high speed, energy efficient self-contained electric hand dryers.

1.3 RELATED SECTIONS

A. Section 06105 - Rough Carpentry: Blocking in stud partitions for mounting hand dryers.

B. Section 16100 - Wiring Methods: Electrical supply, conduit, wiring, boxes, and wiring devices for hand dryers.

1.4 REFERENCES

A. ICC/ANSI A117.1 - American National Standard for Accessible and Useable Buildings and Facilities; 1998.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Operating instructions and performance.
3. Storage and handling requirements and recommendations.
4. Installation methods.

C. Shop Drawings showing dimensions, method of attachment, and required supports.

D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:

E. Dryer to be MADE IN USA Certified. Verify Certification Number.

F. Electrical wiring diagrams for connection of hand dryers.

G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing electric hand dryers with 20 years' minimum experience.

B. Equipment certified by Underwriters Laboratory, Inc., with UL labels.

1.7 WARRANTY

A. Provide manufacturer's standard limited warranty for period specified.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Excel Dryer Inc., which is located at: 357 Chestnut St. P. O. Box 365 ; East Longmeadow, MA 01028; Tel: 413-525-4531; Email: request info (sales@exceldryer.com); Web: www.exceldryer.com

B. Substitutions: Approved equals only.

C. Requests for substitutions will be considered in accordance with provisions of Section 016000.

2.2 ELECTRIC HAND DRYERS

A. Hand Dryer: Warm air, rapid drying, energy efficient electric hand dryer; XLERATOR; surface mounted; entire dryer internally grounded.

1. Warranty Period: 5 years; limited warranty.
2. MADE IN USA Certified.
3. Controls: Automatic, activated by infrared optical sensor. Operates while hands are under blower. Shut-off within 2 seconds when hands removed, or in 35 seconds if hands not removed.
4. Cover: Stainless steel with brushed finish.
5. ADA: ADA XChanger Combo Kit: Comes with ADA Recess Kit #40502 and ADA Height XChanger #40551
6. Air Intake: Inlet openings on bottom of cover.
7. Air Outlet: Delivers focused air stream at average hand position of 4 inches (102 mm) below air outlet.
8. Noise Reduction Nozzle: 1.1 noise reduction nozzle.
9. Wall Plate: Injection molded, rib reinforced plate with metal L brackets to attach cover, with ten 5/16 inch (8 mm) diameter holes for surface mounting to wall and three 7/8 inch (22 mm) diameter holes for electrical wiring; bottom hole suitable for surface conduit.
10. Nominal Size: 11-3/4 inches (298 mm) wide by 12-11/16 inches (322 mm) high by 6-11/16 inches (170 mm) deep.
11. Weight:
    a. 15 pounds (6.8 kg) stainless cover.
12. Power Source: 110/120 volt, 12.5 amp, 60 Hz
13. Combination Motor and Blower: Series commutated, through-flow discharge, vacuum type; 5/8 HP, 20,000 RPM. Air flow rate: 19,000 linear feet per minute (97 meters per second) at air outlet, 16,000 linear feet per minute (81 meters per second) at average hand position of 4 inches (102 mm) below air outlet.
14. Heater: Nichrome wire element, mounted inside blower housing to be vandal proof.
15. Heater Safeguard: Automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
16. Air Temperature: 135 degrees F (55 degrees C) measured at average hand position of 4 inches (102 mm) below air outlet. Air Heater Output: 900 watts.
17. All metal parts coated according to Underwriters Laboratories, Inc. requirements.
18. Mount at the following heights above floor surface:

a. Men's Toilets: 45 inches (1143 mm).
b. Women's Toilets: 43 inches (1092 mm).
c. Toilets for Persons with Physical Disabilities: 37 inches (940 mm).

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Coordinate requirements for blocking to ensure adequate means for support and installation of hand dryers.

D. Coordinate requirements for power supply, conduit, disconnect switches and wiring.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install one or more units, as indicated on the plans, in each toilet room.

C. Install dryers at specified heights.

D. Install dryers securely to supporting substrate so that fixtures are level and aligned with each other. Use type and length of fastener as recommended by manufacturer for type of substrate.

3.4 PROTECTION

A. Inspect installation to verify secure and proper mounting. Test each dryer to verify operation, control functions, and performance. Correct deficiencies.

B. Protect installed driers until completion of project.

C. Replace damaged products before Substantial Completion.

END OF SECTION 102810

SECTION 105113 - METAL LOCKERS AND BENCHES

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 the following:

1. Locker Room Lockers: Single tier with fillers as required, on concrete base.
2. Note, Refer to the alternate section of the specification for the alternate scopes of work as part of the locker upgrades.

B. Related Sections include the following:

1. Division 6 Section "Miscellaneous Carpentry" for wood furring and grounds.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of locker and bench.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work.

1. Show locker fillers, trim, base, sloping tops, and accessories. Include locker-numbering sequence.

C. Samples for Verification: Manufacturer's color charts showing the full range of colors available for units with factory-applied color finishes.

D. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain standard locker units and accessories through one source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver lockers until spaces to receive them are clean, dry, and ready for locker installation.

B. Protect lockers from damage during delivery, handling, storage, and installation.

C. Deliver master keys, control keys, and combination control charts to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products by one of the following:

1. Art Metal Products, Inc. (AMP)
2. Lyon Metal Products, Inc.
3. Penco Products, Inc.; Subsidiary of Vesper Corporation.
4. Republic Storage Systems Co., Inc.

B. Products: Sizes and quantities of each type of locker indicated in drawings. Referenced product listed below is used herein to indicate minimum level of quality and construction required.

1. Locker Room Lockers, to match existing, 15"w x 21"d x 72"h (single tier) AMP-1003 Lockers as manufactured by Art Metal Products, or approved equal.
2. Change Benches in showers; Free standing hardwood bench with steel pedestals, seat to be 9 ½" wide by 42 long.

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 366/A 366M, matte finish, suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness.

B. Galvanized Steel Sheet: STM A 653/A 653M, commercial quality, G60 (Z180) coating designation; mill phosphatized; suitable for exposed applications, and stretcher leveled or roller leveled to stretcher-leveled flatness.

C. Electrolytic Zinc-Coated Steel Sheet: ASTM A 591/A 591M, commercial quality, coating Class C; mill phosphatized; suitable for exposed applications; and stretcher leveled or roller leveled to stretcher-leveled flatness.

D. Extruded Aluminum: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated.

E. Fasteners: Zinc- or nickel-plated steel, slotless-type exposed bolt heads, and self-locking nuts or lock washers for nuts on moving parts.

F. Wire mesh panels: Wire mesh panels shall be framed with 1 ¼" x 1 ¼" 12 ga. structural steel angle with welded corners. Panel fabric to be welded of 10 gauge wire spaced at 2" x 2".

2.3 LOCKER ROOM - LOCKERS

A. Body: Form backs, tops, bottoms, sides, and intermediate partitions from 24 gauge steel sheet; flanged for double thickness at back vertical corners. Comply with the following:

1. Exposed Ends: Form exposed ends of non-recessed lockers from minimum 0.0598-inch- (1.50-mm-) thick steel sheet.

B. Frames: Form channel frames from minimum 16 gauge steel sheet; lapped and welded at corners. Form continuous integral door strike on vertical frame members. Provide resilient bumpers to cushion door closing.

1. Latch Hooks: Form from minimum 0.1046-inch- (2.70-mm-) thick steel; welded or riveted to door frames.
2. Cross Frames: Form intermediate channel cross frames between tiers from minimum 0.0598-inch- (1.50-mm-) thick steel sheet. Weld to vertical frame members.

C. Doors: One-piece steel sheet, formed into channel shape at vertical edges and flanged at right angles at top and bottom edges. Fabricate to prevent springing when opening or closing, and to swing 180 degrees. Comply with the following:

1. Sheet Thickness: 16 gauge or 0.074 inch minimum.
2. Reinforcement: Brace or reinforce inner face of doors more than 15 inches (381 mm) wide.
3. Louvered Vents: Stamped, louvered vents in door face, as follows:
    a. Single-Tier Lockers: Louver openings at top and bottom of each door.

D. Hinges: Steel, full loop, five or seven knuckle; tight pin; minimum 2 inches (51 mm) high. Weld to inside of door frame and attach to door with at least two factory-installed fasteners that are completely concealed and tamper resistant when door is closed.

1. Provide at least three hinges for each door more than 42 inches (1067 mm) high and at least two hinges for each door 42 inches (1067 mm) high or less.

E. Projecting Handle and Latch: Manufacturer's standard, positive automatic, prelocking, pry-resistant latch and pull; chromium-plated, heavy-duty, vandal-resistant, lift-up handle, as follows:

1. Provide minimum three-point latching for each door more than 42 inches (1067 mm) high; minimum two-point latching for each door 42 inches (1067 mm) high or less.
2. Provide single-point gravity or spring-actuated latch with padlock lug.

2.4 LOCKS

A. Fabricate locker with a recessed lock hasp, to receive a padlock supplied by others, installed on lockers using security-type fasteners:

2.5 LOCKER ACCESSORIES

A. Interior Equipment: Furnish each locker with the following items, unless otherwise indicated:

1. Hooks: Manufacturer's standard zinc-plated, ball-pointed steel. Provide one double-prong ceiling hook, and not fewer than two single-prong wall hooks for single- and double-tier units. Attach hooks with at least two fasteners.

B. Number Plates: Manufacturer's standard etched, embossed, or stamped, aluminum number plates with numerals at least 3/8 inch (9 mm) high. Number lockers in sequence indicated. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.

C. Name Inserts: Provide a slot on each door to accept a name card

D. Filler Panels: Manufacturer's standard; fabricated from minimum 0.0478-inch- (1.20-mm-) thick steel sheet in an unequal leg angle shape, and finished to match lockers. Provide slip joint filler angle formed to receive filler panel.

E. Boxed End Panels: Manufacturer's standard; fabricated from minimum 0.0598-inch- (1.50-mm-) thick steel sheet, with 1-inch- (25-mm-) wide edge dimension, finished to match lockers, and designed for concealing exposed ends of non-recessed lockers.

1. Provide one-piece panels for double-row (back-to-back) locker ends.

2.6 FABRICATION

A. Unit Principle: Fabricate each locker with an individual door and frame, individual top, bottom, back, and shelves, and common intermediate uprights separating compartments.

B. Knocked-Down Construction: Fabricate lockers for nominal assembly at Project site.

C. Fabricate lockers square, rigid, and without warp, with metal faces flat and free of dents or distortion. Make exposed metal edges free of sharp edges and burrs, and safe to touch. Weld frame members together to form a rigid, one-piece assembly.

1. Form locker-body panels, doors, shelves and accessories from one-piece steel sheet, unless otherwise indicated.

2.7 FINISHES, GENERAL

A. Finish all steel surfaces and accessories, except prefinished stainless-steel and chrome-plated surfaces.

B. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.8 STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces of dirt, oil, grease, mill scale, rust, and other contaminants that could impair paint bond. Use manufacturer's standard methods.

B. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard baked-enamel finish consisting of a thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 1.4 mils (0.036 mm) on doors, frames, and legs, and 1.1 mils (0.028 mm) elsewhere.

2.9 GALVANIZED STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.

1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

B. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard baked-enamel finish consisting of a thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 1.4 mils (0.036 mm) on doors, frames, and legs, and 1.1 mils (0.028 mm) elsewhere.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine concrete bases for suitable conditions where metal lockers are to be installed.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install metal lockers and accessories level, plumb, rigid, and flush according to manufacturer's written instructions.

B. Anchor lockers to bases and walls at intervals recommended by manufacturer, but not more than 36 inches (910 mm) o.c. Install anchors through backup reinforcing plates where necessary to avoid metal distortion, using concealed fasteners.

C. Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.

1. Attach sloping top units to lockers, with closures at exposed ends.

D. Attach boxed end panels with concealed fasteners to conceal exposed ends of non-recessed lockers.

E. Attach finished end panels with fasteners only at perimeter to conceal exposed ends of non-recessed lockers.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust doors and latches to operate easily without binding. Verify that integral locking devices operate properly.

B. Clean interior and exposed exterior surfaces and polish stainless-steel and nonferrous-metal surfaces.

C. Protect lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit locker use during construction.

D. Touch up marred finishes or replace locker units that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105113

SECTION 220518 - ESCUTCHEONS FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Escutcheons.
2. Floor plates.

1.2 ACTION SUBMITTALS

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

PART 2 - PRODUCTS

2.1 ESCUTCHEONS

A. One-Piece, Cast-Brass Type: With polished, chrome-plated and rough-brass finish and setscrew fastener.

B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with chrome-plated finish and spring-clip fasteners.

C. One-Piece, Stamped-Steel Type: With chrome-plated finish and spring-clip fasteners.

2.2 FLOOR PLATES

A. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install escutcheons for piping penetrations of walls, ceilings, and finished floors.

B. Install escutcheons with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.

1. Escutcheons for New Piping:

a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.

b. Chrome-Plated Piping: One-piece, cast-brass type with polished, chrome-plated finish.
c. Insulated Piping: One-piece, stamped-steel type.
d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
e. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, stamped-steel type.
f. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
g. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, stamped-steel type.
h. Bare Piping in Unfinished Spaces: One-piece, cast-brass type with polished, chrome-plated finish.
i. Bare Piping in Unfinished Spaces: One-piece, stamped-steel type.
j. Bare Piping in Equipment Rooms: One-piece, cast-brass type with polished, chrome-plated finish.
k. Bare Piping in Equipment Rooms: One-piece, stamped-steel type.

C. Install floor plates for piping penetrations of equipment-room floors.

D. Install floor plates with ID to closely fit around pipe, tube, and insulation of piping and with OD that completely covers opening.

1. New Piping: One-piece, floor-plate type.

3.2 FIELD QUALITY CONTROL

A. Replace broken and damaged escutcheons and floor plates using new materials.

END OF SECTION 220518

SECTION 220523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Brass ball valves.
2. Bronze ball valves.

B. Related Sections:

1. Section 220553 "Identification for Plumbing Piping and Equipment" for valve tags and schedules.
2. Section 221116 "Domestic Water Piping" for valves applicable only to this piping.
3. Section 221319 "Sanitary Waste Piping Specialties" for valves applicable only to this piping.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of valve indicated.

1.3 QUALITY ASSURANCE

A. ASME Compliance: ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.

B. NSF Compliance: NSF 61 for valve materials for potable-water service.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR VALVES

A. Refer to valve schedule articles for applications of valves.

B. Valve Pressure and Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.

C. Valve Sizes: Same as upstream piping unless otherwise indicated.

D. Valves in Insulated Piping: With 2-inch stem extensions and the following features:

1. Ball Valves: With extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.

E. Valve-End Connections:

1. Flanged: With flanges according to ASME B16.1 for iron valves.
2. Solder Joint: With sockets according to ASME B16.18.
3. Threaded: With threads according to ASME B1.20.1.

2.2 BRASS BALL VALVES

A. One-Piece, Reduced-Port, Brass Ball Valves with Brass Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Kitz Corporation.

2. Description:

a. Standard: MSS SP-110.
b. CWP Rating: 400 psig.
c. Body Design: One piece.
d. Body Material: Forged brass.
e. Ends: Threaded.
f. Seats: PTFE or TFE.
g. Stem: Brass.
h. Ball: Chrome-plated brass.
i. Port: Reduced.

B. Two-Piece, Full-Port, Brass Ball Valves with Brass Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Crane Co.; Crane Valve Group; Crane Valves.
b. Crane Co.; Crane Valve Group; Jenkins Valves.
c. DynaQuip Controls.
d. Flow-Tek, Inc.; a subsidiary of Bray International, Inc.
e. Hammond Valve.
f. Jamesbury; a subsidiary of Metso Automation.
g. Jomar International, LTD.
h. Kitz Corporation.
i. Legend Valve.
j. Marwin Valve; a division of Richards Industries.
k. Milwaukee Valve Company.
l. NIBCO INC.
m. Red-White Valve Corporation.

n. RuB Inc.

2. Description:

a. Standard: MSS SP-110.
b. SWP Rating: 150 psig.
c. CWP Rating: 600 psig.
d. Body Design: Two piece.
e. Body Material: Forged brass.
f. Ends: Threaded.
g. Seats: PTFE or TFE.
h. Stem: Brass.
i. Ball: Chrome-plated brass.
j. Port: Full.

C. Two-Piece, Regular-Port, Brass Ball Valves with Brass Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Hammond Valve.
b. Jamesbury; a subsidiary of Metso Automation.
c. Legend Valve.
d. Marwin Valve; a division of Richards Industries.
e. Milwaukee Valve Company.

2. Description:

a. Standard: MSS SP-110.
b. SWP Rating: 150 psig.
c. CWP Rating: 600 psig.
d. Body Design: Two piece.
e. Body Material: Forged brass.
f. Ends: Threaded.
g. Seats: PTFE or TFE.
h. Stem: Brass.
i. Ball: Chrome-plated brass.
j. Port: Regular.

2.3 BRONZE BALL VALVES

A. One-Piece, Reduced-Port, Bronze Ball Valves with Bronze Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. American Valve, Inc.
b. Conbraco Industries, Inc.; Apollo Valves.
c. NIBCO INC.

2. Description:

a. Standard: MSS SP-110.
b. CWP Rating: 400 psig.
c. Body Design: One piece.
d. Body Material: Bronze.
e. Ends: Threaded.
f. Seats: PTFE or TFE.
g. Stem: Bronze.
h. Ball: Chrome-plated brass.
i. Port: Reduced.

B. Two-Piece, Full-Port, Bronze Ball Valves with Bronze Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. American Valve, Inc.
b. Conbraco Industries, Inc.; Apollo Valves.
c. Crane Co.; Crane Valve Group; Crane Valves.
d. Hammond Valve.
e. Lance Valves; a division of Advanced Thermal Systems, Inc.
f. Legend Valve.
g. Milwaukee Valve Company.
h. NIBCO INC.
i. Red-White Valve Corporation.
j. Watts Regulator Co.; a division of Watts Water Technologies, Inc.

2. Description:

a. Standard: MSS SP-110.
b. SWP Rating: 150 psig.
c. CWP Rating: 600 psig.
d. Body Design: Two piece.
e. Body Material: Bronze.
f. Ends: Threaded.
g. Seats: PTFE or TFE.
h. Stem: Bronze.
i. Ball: Chrome-plated brass.
j. Port: Full.

C. Two-Piece, Regular-Port, Bronze Ball Valves with Bronze Trim:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. American Valve, Inc.
b. Conbraco Industries, Inc.; Apollo Valves.
c. Crane Co.; Crane Valve Group; Jenkins Valves.
d. Crane Co.; Crane Valve Group; Stockham Division.

e. DynaQuip Controls.
f. Hammond Valve.
g. Lance Valves; a division of Advanced Thermal Systems, Inc.
h. Milwaukee Valve Company.
i. NIBCO INC.

2. Description:

a. Standard: MSS SP-110.
b. SWP Rating: 150 psig.
c. CWP Rating: 600 psig.
d. Body Design: Two piece.
e. Body Material: Bronze.
f. Ends: Threaded.
g. Seats: PTFE or TFE.
h. Stem: Bronze.
i. Ball: Chrome-plated brass.
j. Port: Regular.
k. and weight.

PART 3 - EXECUTION

3.1 VALVE INSTALLATION

A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.

B. Locate valves for easy access and provide separate support where necessary.

C. Install valves in horizontal piping with stem at or above center of pipe.

D. Install valves in position to allow full stem movement.

3.2 ADJUSTING

A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.3 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

A. Select valves, except wafer types, with the following end connections:

1. For Copper Tubing, NPS 2 and Smaller: Threaded ends except where solder-joint valve-end option is indicated in valve schedules below.
2. For Copper Tubing, NPS 2-1/2 to NPS 4: Flanged ends except where threaded valve-end option is indicated in valve schedules below.

3.4 DOMESTIC, HOT- AND COLD-WATER VALVE SCHEDULE

A. Pipe NPS 2 and Smaller:

1. Bronze and Brass Valves: May be provided with solder-joint ends instead of threaded ends.

B. Pipe NPS 2-1/2 and Larger:

1. Iron Valves, NPS 2-1/2 to NPS 4: May be provided with threaded ends instead of flanged ends.

3.5 SANITARY-WASTE AND STORM-DRAINAGE VALVE SCHEDULE

A. Pipe NPS 2 and Smaller:

1. Bronze and Brass Valves: May be provided with solder-joint ends instead of threaded ends.
2. Ball Valves: One piece, full port, brass or bronze with brass trim.

B. Pipe NPS 2-1/2 and Larger:

1. Iron Valves, NPS 2-1/2 to NPS 4: May be provided with threaded ends instead of flanged ends.

END OF SECTION 220523

SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal pipe hangers and supports.
2. Trapeze pipe hangers.
3. Thermal-hanger shield inserts.
4. Fastener systems.
5. Pipe positioning systems.
6. Equipment supports.

1.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design trapeze pipe hangers and equipment supports, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance: Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.

1. Design supports for multiple pipes capable of supporting combined weight of supported systems, system contents, and test water.
2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
3. Design seismic-restraint hangers and supports for piping and equipment and obtain approval from authorities having jurisdiction.

1.3 ACTION SUBMITTALS

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

B. Shop Drawings: Signed and sealed by a qualified professional engineer. Show fabrication and installation details and include calculations for the following; include Product Data for components:

1. Trapeze pipe hangers.
2. Equipment supports.

C. Delegated-Design Submittal: For trapeze hangers indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.5 QUALITY ASSURANCE

A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

A. Carbon-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

B. Stainless-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
3. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

C. Copper Pipe Hangers:

1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
2. Hanger Rods: Continuous-thread rod, nuts, and washer made of stainless steel.

2.2 TRAPEZE PIPE HANGERS

A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural carbon-steel shapes with MSS SP-58 carbon-steel hanger rods, nuts, saddles, and U-bolts.

2.3 THERMAL-HANGER SHIELD INSERTS

A. Insulation-Insert Material for Cold Piping: ASTM C 552, Type II cellular glass with 100-psig or ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength and vapor barrier.

B. Insulation-Insert Material for Hot Piping: ASTM C 552, Type II cellular glass with 100-psig or ASTM C 591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength.

C. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.

D. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.

E. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.4 FASTENER SYSTEMS

A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

B. Mechanical-Expansion Anchors: Insert-wedge-type, stainless- steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.5 PIPE POSITIONING SYSTEMS

A. Description: IAPMO PS 42, positioning system of metal brackets, clips, and straps for positioning piping in pipe spaces; for plumbing fixtures in commercial applications.

2.6 EQUIPMENT SUPPORTS

A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.7 MISCELLANEOUS MATERIALS

A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.

B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.

1. Properties: Nonstaining, noncorrosive, and nongaseous.
2. Design Mix: 5000-psi, 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT INSTALLATION

A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.

B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.

1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
2. Field fabricate from ASTM A 36/A 36M, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.

C. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.

D. Fastener System Installation:

1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.

E. Pipe Positioning-System Installation: Install support devices to make rigid supply and waste piping connections to each plumbing fixture.

F. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.

G. Equipment Support Installation: Fabricate from welded-structural-steel shapes.

H. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

I. Install lateral bracing with pipe hangers and supports to prevent swaying.

J. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.

K. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

L. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

M. Insulated Piping:

1. Attach clamps and spacers to piping.

    a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
    b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
    c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.

2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.

    a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.

3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.

    a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.

4. Shield Dimensions for Pipe: Not less than the following:

    a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
    b. NPS 4: 12 inches long and 0.06 inch thick.
    c. NPS 5 and NPS 6: 18 inches long and 0.06 inch thick.

5. Pipes NPS 8 and Larger: Include wood or reinforced calcium-silicate-insulation inserts of length at least as long as protective shield.
6. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.2 EQUIPMENT SUPPORTS

A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.

B. Grouting: Place grout under supports for equipment and make bearing surface smooth.

C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.3 METAL FABRICATIONS

A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.

B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.

C. Field Welding: Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.4 ADJUSTING

A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.

B. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal are specified in Section 099113 "Exterior Painting." Section 099123 "Interior Painting." Section 099600 "High-Performance Coatings."

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.6 HANGER AND SUPPORT SCHEDULE

A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.

B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.

C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.

D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.

E. Use carbon-steel pipe hangers and supports and metal trapeze pipe hangers and attachments for general service applications.

F. Use stainless-steel pipe hangers and stainless-steel or corrosion-resistant attachments for hostile environment applications.

G. Use copper-plated pipe hangers and copper or stainless-steel attachments for copper piping and tubing.

H. Use padded hangers for piping that is subject to scratching.

I. Use thermal-hanger shield inserts for insulated piping and tubing.

J. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30.
2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to 1050 deg F, pipes NPS 4 to NPS 24, requiring up to 4 inches of insulation.
3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36, requiring clamp flexibility and up to 4 inches of insulation.
4. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
5. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30.
6. Pipe Saddle Supports (MSS Type 36): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
7. Pipe Stanchion Saddles (MSS Type 37): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
8. Single-Pipe Rolls (MSS Type 41): For suspension of pipes NPS 1 to NPS 30, from two rods if longitudinal movement caused by expansion and contraction might occur.

9. Complete Pipe Rolls (MSS Type 44): For support of pipes NPS 2 to NPS 42 if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.

K. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.

L. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.

M. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
6. C-Clamps (MSS Type 23): For structural shapes.
7. Welded-Steel Brackets: For support of pipes from below, or for suspending from above by using clip and rod. Use one of the following for indicated loads:

    a. Light (MSS Type 31): 750 lb.
    b. Medium (MSS Type 32): 1500 lb.
    c. Heavy (MSS Type 33): 3000 lb.

8. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
9. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.

N. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.

O. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches.
2. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41, roll hanger with springs.
3. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.

P. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.

Q. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.

R. Use pipe positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

END OF SECTION 220529

SECTION 220553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Equipment labels.
2. Warning signs and labels.
3. Pipe labels.

1.2 ACTION SUBMITTAL

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

B. Equipment-Label Schedule: Include a listing of all equipment to be labeled and the proposed content for each label.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

A. Metal Labels for Equipment:

1. Material and Thickness: Brass, 0.032 inch; stainless steel, 0.025 inch; aluminum, 0.032 inch or anodized aluminum, 0.032 inch thick, with predrilled holes for attachment hardware.
2. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
3. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
4. Fasteners: Stainless-steel rivets or self-tapping screws.
5. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

B. Plastic Labels for Equipment:

1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, with predrilled holes for attachment hardware.
2. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.

3. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
4. Fasteners: Stainless-steel rivets or self-tapping screws.
5. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

C. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.

D. Equipment-Label Schedule: For each item of equipment to be labeled, on 8-1/2-by-11-inch bond paper. Tabulate equipment identification number and identify Drawing numbers where equipment is indicated (plans, details, and schedules) and the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.

2.2 WARNING SIGNS AND LABELS

A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, with predrilled holes for attachment hardware.

B. Letter Color: To be specified.

C. Background Color: To be specified.

D. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.

E. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.

F. Fasteners: Stainless-steel rivets or self-tapping screws.

G. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

H. Label Content: Include caution and warning information, plus emergency notification instructions.

2.3 PIPE LABELS

A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service and showing flow direction.

B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.

C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.

D. Pipe-Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; pipe size; and an arrow indicating flow direction.

1. Flow-Direction Arrows: Integral with piping-system service lettering to accommodate both directions, or as separate unit on each pipe label to indicate flow direction.
2. Lettering Size: At least 1-1/2 inches high.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.2 EQUIPMENT LABEL INSTALLATION

A. Install or permanently fasten labels on each major item of mechanical equipment.

B. Locate equipment labels where accessible and visible.

3.3 PIPE LABEL INSTALLATION

A. Piping Color-Coding: Painting of piping is specified in Section 099123 "Interior Painting" and Section 099600 "High-Performance Coatings."

B. Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:

1. Near each valve and control device.
2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
3. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
4. At access doors, manholes, and similar access points that permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.
6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

C. Pipe Label Color Schedule:

1. Domestic Water Piping:

   a. Background Color: Blue.
   b. Letter Color: White.

2. Sanitary Waste and Storm Drainage Piping:

   a. Background Color: Yellow.
   b. Letter Color: Black.

END OF SECTION 220553

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes insulating the following plumbing piping services:

1. Domestic hot-water piping.
2. Domestic recirculating hot-water piping.
3. Sanitary waste piping exposed to freezing conditions.
4. Supplies and drains for handicap-accessible lavatories and sinks.

1.2 ACTION SUBMITTALS

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

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail insulation application at pipe expansion joints for each type of insulation.
3. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
4. Detail removable insulation at piping specialties, equipment connections, and access panels.
5. Detail application of field-applied jackets.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

B. Comply with the following applicable standards and other requirements specified for miscellaneous components:

1. Supply and Drain Protective Shielding Guards: ICC A117.1.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule," "Outdoor, Aboveground Piping Insulation Schedule," and "Outdoor, Underground Piping Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

F. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Products: Subject to compliance with requirements, provide the following:

a. Pittsburgh Corning Corporation; Foamglas.

2. Special-Shaped Insulation: ASTM C 552, Type III.
3. Preformed Pipe Insulation without Jacket: Comply with ASTM C 552, Type II, Class 1.
4. Preformed Pipe Insulation with Factory-Applied ASJ: Comply with ASTM C 552, Type II, Class 2.
5. Factory fabricate shapes according to ASTM C 450 and ASTM C 585.

G. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Aeroflex USA, Inc.; Aerocel.
b. Armacell LLC; AP Armaflex.
c. K-Flex USA; Insul-Lock, Insul-Tube, and K-FLEX LS.

H. Mineral-Fiber, Preformed Pipe Insulation:

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Fibrex Insulations Inc.; Coreplus 1200.
    b. Johns Manville; Micro-Lok.
    c. Knauf Insulation; 1000-Degree Pipe Insulation.
    d. Manson Insulation Inc.; Alley-K.
    e. Owens Corning; Fiberglas Pipe Insulation.

2. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

I. Polyolefin: Unicellular, polyethylene thermal plastic insulation. Comply with ASTM C 534 or ASTM C 1427, Type I, Grade 1 for tubular materials.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Armacell LLC; Tubolit.
    b. Nomaco Insulation; IMCOLOCK and NOMALOCK.

2.2 INSULATING CEMENTS

A. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.

1. Products: Subject to compliance with requirements, provide the following:

    a. Ramco Insulation, Inc.; Ramcote 1200 and Quik-Cote.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Cellular-Glass Adhesive: Two-component, thermosetting urethane adhesive containing no flammable solvents, with a service temperature range of minus 100 to plus 200 deg F.

1. Products: Subject to compliance with requirements, provide the following:

    a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 81-84.

2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. Aeroflex USA, Inc.; Aeroseal.
   b. Armacell LLC; Armaflex 520 Adhesive.
   c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-75.
   d. K-Flex USA; R-373 Contact Adhesive.

2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-127.
   b. Eagle Bridges - Marathon Industries; 225.
   c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-60/85-70.
   d. Mon-Eco Industries, Inc.; 22-25.

2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.4 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.

1. Products: Subject to compliance with requirements,:

   a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-80/30-90.
   b. Vimasco Corporation; 749.

2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.

3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
5. Color: White.

C. Breather Mastic: Water based; suitable for indoor and outdoor use on above-ambient services.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-10.
   b. Eagle Bridges - Marathon Industries; 550.
   c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 46-50.
   d. Mon-Eco Industries, Inc.; 55-50.
   e. Vimasco Corporation; WC-1/WC-5.

2. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: 60 percent by volume and 66 percent by weight.
5. Color: White.

2.5 SEALANTS

A. Joint Sealants:

1. Joint Sealants for Cellular-Glass Products: Subject to compliance with requirements, provide one of the following:

   a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.
   b. Eagle Bridges - Marathon Industries; 405.
   c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-45.
   d. Mon-Eco Industries, Inc.; 44-05.
   e. Pittsburgh Corning Corporation; Pittseal 444.

2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Permanently flexible, elastomeric sealant.
4. Service Temperature Range: Minus 100 to plus 300 deg F.
5. Color: White or gray.
6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
7. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

BUILDING ALTERATIONS
FOR
VINELAND ELECTRICAL

415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

ABBREVIATIONS

AL. TH.	ALUMINUM THRESHOLD				
A.T.	AIR TERMINAL	GYP.	GYPSUM BOARD	R.O.	ROUGH OPENING
				R.O.W.	RIGHT OF WAY
B.L.P.	BORROWED LIGHT PANEL	HRD. WD.	HARDWOOD	R.W.C.	RAIN WATER CONDUCTOR
B.P.	BEARING PLATE				
BRG.	BEARING	INSUL.	INSULATION	S.A.	SOUND ATTENUATION BLANKET
BRK.	BRICK	INT.	INTERIOR	SAN.	SANITARY
		INV.	INVERT	SCH.	SCHEDULE
CAB.	CABINET			S.D.	SOAP DISPENSER
C.A.B.C.	COURSE AGGREGATE BITUMINOUS CONCRETE	JAN.	JANITOR	SECT.	SECTION
CARP.	CARPET	JST.	JOIST	SEW.	SEWER
C.B.	CATCH BASIN	JT.	JOINT	SK.L.	SKYLIGHT
C.J.	CONTROL JOINT			SPEC.	SPECIFICATION(S)
CLG.	CEILING	KIT.	KITCHEN	S.S.	SERVICE SINK
CL.	CLOSET			STL.	STEEL
C.L.L.	CONTRACT LIMIT LINE	LAV.	LAVATORY	ST.STL.	STAINLESS STEEL
CLR.	CLEAR - CLEARANCE	L.M.T.	LIGHT WEIGHT	STOR.	STORAGE
C.I.	CAST IRON	L.F.	LINEAR FEET	S.U.	SINK UNIT
C.M.U.	CONCRETE MASONRY UNIT	MAX.	MAXIMUM		
C.O.	CLEAN OUT	MBLTH.	MARBLE THRESHOLD	T.	TREAD
COL.	COLUMN	MECH.	MECHANICAL	T. ON.	TOP OF CONCRETE
CONC.	CONCRETE	MFR.	MANUFACTURER	T.D.	TOWEL DISPENSER
CONT.	CONTINUOUS	MIN.	MINIMUM	T.F.G.	TONGUE AND GROOVE
CONTR.	CONTRACTOR	MIR.	MIRROR	TH.	THRESHOLD
CORR.	CORRIDOR	M.O.	MASONRY OPENING	THK.	THICK - THICKNESS
CORRU.	CORRUGATED	M.T.P.	METAL TOILET PARTITION	T.O.F.	TOP OF FOOTING
C.S.	CONSTRUCTION SHOWING	M.R.	MAT RECESS	T.O.M.	TOP OF MASONRY
C.S.P.	CONSTRUCTION SHOWING PAINTED	M. REC.	MOP RECEPTOR	T.O.S.	TOP OF STEEL
C.T.	CERAMIC TILE	M.T.	METAL THRESHOLD	T.PNL.	TELEPHONE PANEL
C.T.C.B.	CERAMIC TILE COVE BASE	MTL.	METAL	TYP.	TYPICAL
C.W.	COLD WATER			T.P.	TOILET PARTITION
		N.I.C.	NOT IN CONTRACT	UC.	UNDERCUT
DEMO.	DEMOLISH	N.T.S.	NOT TO SCALE	U.D.	UNIT DIMENSION
DIA.	DIAMETER			U/G	UNDERGROUND
D.F.	DRINKING FOUNTAIN	O.C.	ON CENTER	U.H.	UNIT HEATER
D.L.	DOUBLE LOAD	O.D.	OUTSIDE DIAMETER	U.N.O.	UNLESS NOTED OTHERWISE
DR.	DOOR	OFF.	OFFICE	U/S	UNDER SLAB
DWG.	DRAWING	O.H.D.	OVERHEAD DOOR	U.V.	UNIT VENTILATOR
		OPNG.	OPENING	V.	SHEET VINYL
EA.	EACH			V.C.B.	VINYL COVE BASE
ELEC.	ELECTRIC - ELECTRICAL	PERF.	PERFORATED	V.C.T.	VINYL COMPOSITION TILE
ELEV.	ELEVATION	PLAS.	PLASTIC	V.S.B.	VINYL STRAIGHT BASE
E. PNL.	ELECTRICAL PANEL	PLAT.	PLATFORM	VEST.	VESTIBULE
EQUIP.	EQUIPMENT	PLYWD	PLYWOOD	V.T.R.	VENT THRU ROOF
EWC.	ELECTRIC WATER COOLER	P.S.F.	POUNDS PER SQUARE FOOT	W/	WITH
EXP. JT.	EXPANSION JOINT	P.S.I.	POUNDS PER SQUARE INCH	W.B.	WONDER BD. CEMENTATIOUS BACKER
EXH.	EXHAUST	P.T.	PORCELAIN TILE	W.C.	WATER CLOSET
EXIST'G	EXISTING	P.T.C.B.	PORCELAIN TILE COVE BASE	WD.	WOOD
E.T.R.	EXISTING TO REMAIN	PTD.	PAINTED	W/O	WITHOUT
		PVC.	POLYVINYL CHLORIDE	WSCT.	WAINSCOT
F.A.B.C.	FINE AGGREGATE BITUMINUOUS CONCRETE			WTH.	WIDTH
F.B.	FACE BRICK	Q.T.	QUARRY TILE	W.M.F.	WELD WIRE MESH
F.D.	FLOOR DRAIN	Q.T.C.B.	QUARRY TILE COVE BASE		
F.E.	FIRE EXTINGUISHER				
FIN. FL.	FINISH FLOOR	R.	RISER		
FIN. GR.	FINISH GRADE	RAD.	RADIUS		
FL.	FLOOR	R.D.	ROOF DRAIN		
FDN.	FOUNDATION	REQ'D	REQUIRED		
FTG.	FOOTING	RFG.	ROOFING		
		R.F.S.	RECESSED FLOOR SLEEVE		
		RM.	ROOM		

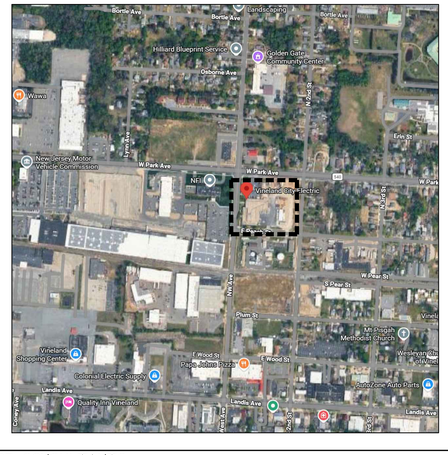
SYMBOLS

- EARTH
- COMPACTED FILL
- CONCRETE
- CONCRETE BLOCK
- BRICK
- STEEL
- RIGID INSULATION
- BATT INSULATION
- FINISH LUMBER
- ROUGH LUMBER
- SECTION NUMBER
- SECTION INDICATOR
- SHEET NUMBER
- ELEVATION

LOCATION MAP

SITE LOCATION

211 N. WEST AVENUE,
VINELAND, NJ 08360



LIST OF CONSULTANTS

ARCHITECT
McKERNAN ARCHITECTS & ASSOCIATES
100 DOBBS LANE SUITE 204 CHERRY
HILL, N.J.
TEL: (856)-616-2960
FAX: (856)-616-2963

MEP ENGINEER
HOLSTEIN WHITE
3800 HORIZON BLVD SUITE 203
TREVOSE, PA
TEL: (215)-322-7711
FAX: (215)-322-7709

DRAWING INDEX

CS-1 COVER SHEET

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D-2 DEMO CEILING PLAN
D-3 DEMO ELEVATIONS
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A-2 ENLARGED RESTROOM PLAN & INTERIOR ELEVATIONS
A-3 INTERIOR ELEVATIONS
A-4 REFLECTED CEILING PLAN
A-5 (ALTERNATE #1) ELEVATIONS & DETAILS

MECHANICAL DRAWINGS:

DM-1.0 PARTIAL GROUND FLOOR DEMOLITION MECHANICAL PLAN
M-1.0 PARTIAL GROUND FLOOR MECHANICAL PLAN
M-2.0 MECHANICAL SCHEDULES & DETAILS
M-2.1 MECHANICAL SCHEDULES & DETAILS

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E-1.0 PARTIAL GROUND FLOOR POWER PLAN
E-1.1 PARTIAL GROUND FLOOR LIGHTING PLAN
E-2.0 ELECTRICAL SCHEDULES & DETAILS
E-2.1 ELECTRICAL SCHEDULES & DETAILS

PLUMBING DRAWINGS:

PD-1.0 PARTIAL GROUND FLOOR DEMOLITION PLUMBING PLAN
P-1.0 PARTIAL GROUND FLOOR SANITARY PLAN
P-1.1 PARTIAL GROUND FLOOR DOMESTIC WATER PLAN
P-2.0 PLUMBING SCHEDULES & DETAILS

CODE INFORMATION

APPLICABLE CODES:

INTERNATIONAL BUILDING CODE/2021 (NJAC 5:23-3.14)
THE NATIONAL STANDARD PLUMBING CODE/2021 (N.J.A.C. 5:23-3.15)
THE NATIONAL ELECTRICAL CODE (NFPA 70) 2020 (NJAC 5:23-3.16)
INTERNATIONAL MECHANICAL CODE/2021 (NJAC 5:23-3.20)
BARRIER FREE REQUIREMENTS PER ICC/ANSI A117.1-2017
REHABILITATION CODE (NJAC 5:23-6)

No.	DATE	DESCRIPTION	REV'D BY
		REVISIONS	
	MAR. 13TH 2026	ISSUED FOR BID	

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: COVER SHEET

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 21964 - PA ARCH #A-084614 - CT ARCH TECH

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SCALE: AS NOTED
PROJ.NO.: 1544
DATE: 4/10/25
REV'D.:
DRAWN BY: GES
CHKD.BY: FFF/DF

DRAWING NO: CS-1

PLOT DATE & TIME: Mar 12, 2026 - 11:42am
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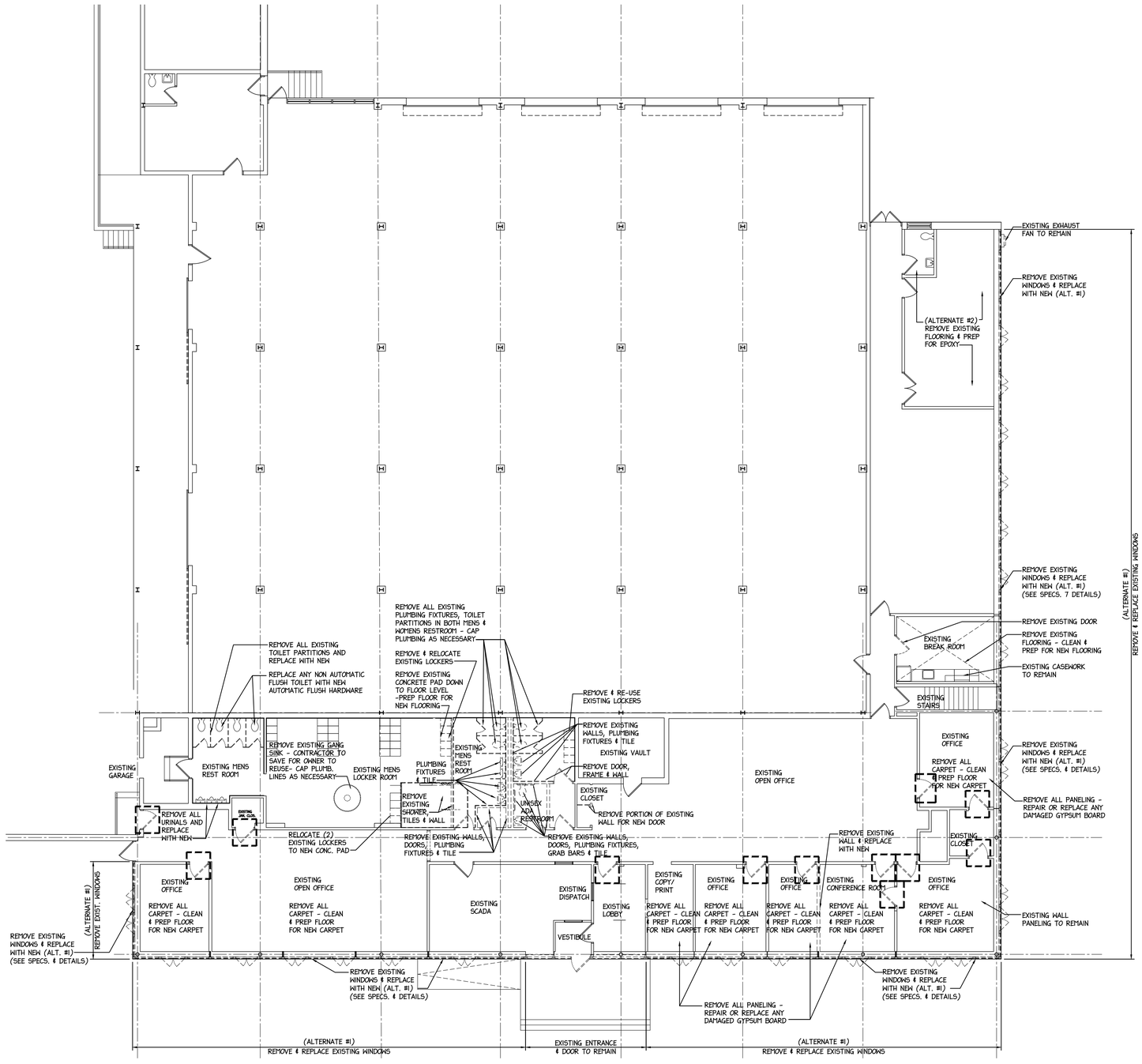

1 / D-1 DEMOLITION FLOOR PLAN
SCALE: 1/8" = 1'-0"

DEMO NOTES:

1. REMOVE ALL DOORS INDICATED ON PLAN WITH [---] AND REPLACE WITH NEW WOOD DOORS WITH LOUVER - COLOR OF DOOR TO MATCH EXISTING DOORS (RE-USE EXISTING FRAMES)

No.	DATE	DESCRIPTION	REV'D BY
	MAR. 13TH 2026	ISSUED FOR BID	

REVISIONS

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VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: DEMOLITION FLOOR PLAN

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #13964 - PA ARCH RA-014613-E - CT ARCH 7104

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DATE: 4/10/25
REVD.:
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CHKD.BY: FFF/DF

DRAWING NO: D-1

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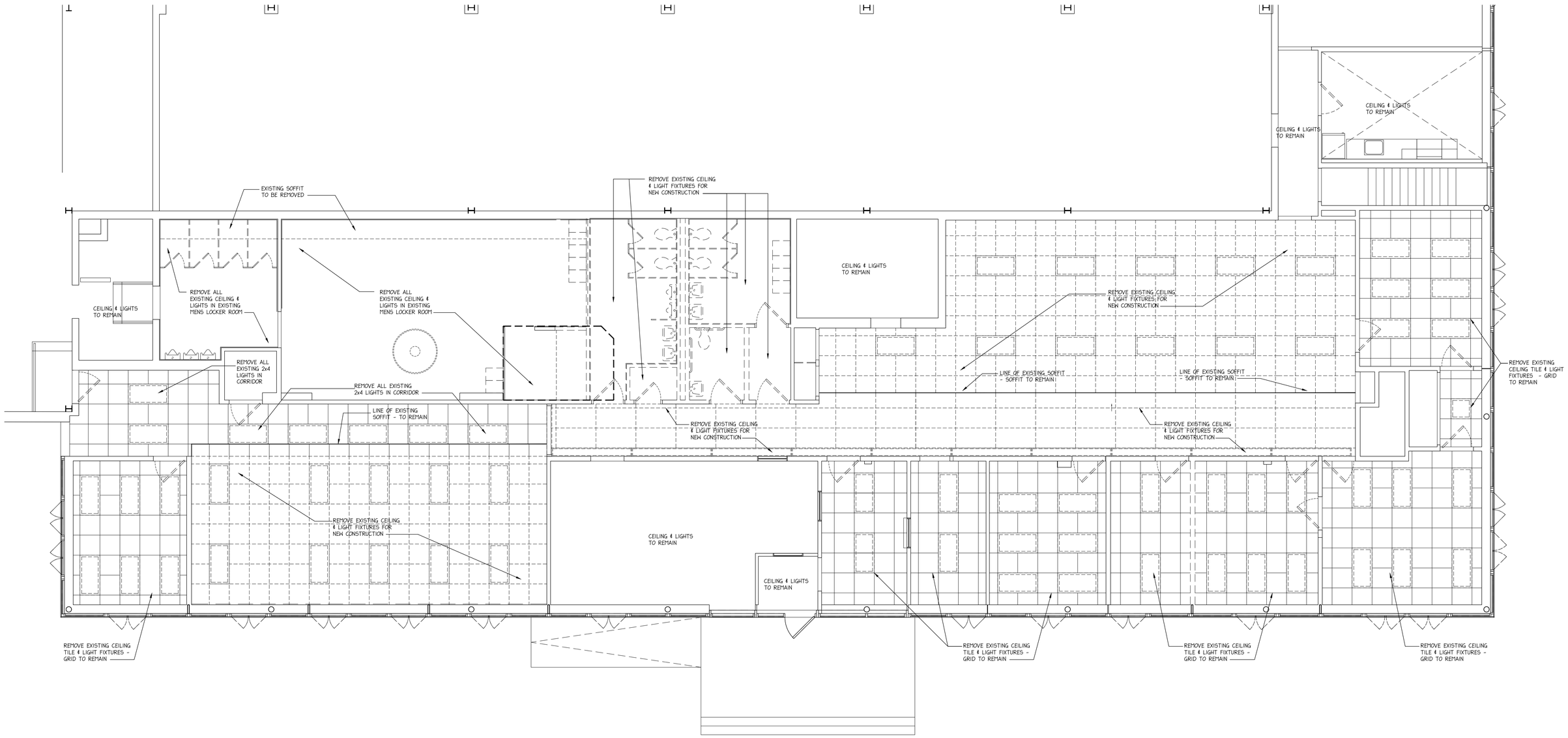

1 / D-2 CEILING DEMO PLAN

SCALE: 1/4" = 1'-0"

NOTE:
FILL IN CEILING GRID WHERE 2x4 LIGHTS WERE REMOVED TO SUPPORT NEW 2x2 CEILING TILES

No.	DATE	DESCRIPTION	REV'D BY
		REVISIONS	
	MAR. 13TH 2026	ISSUED FOR BID	

APPROVAL:

PROJECT:

VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: DEMO CEILING PLAN

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 10984 , PA ARCH RA-014431-X , CT ARCH 7534

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DATE: 4/10/25
REV'D.:
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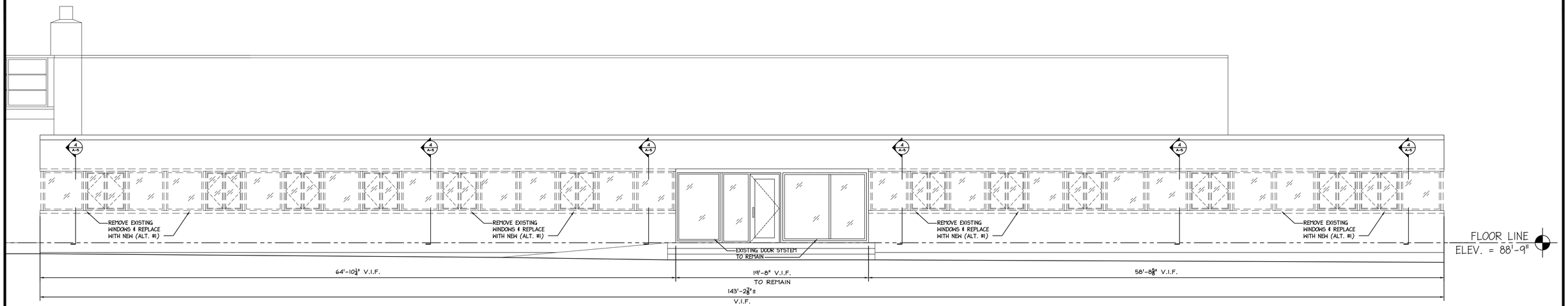
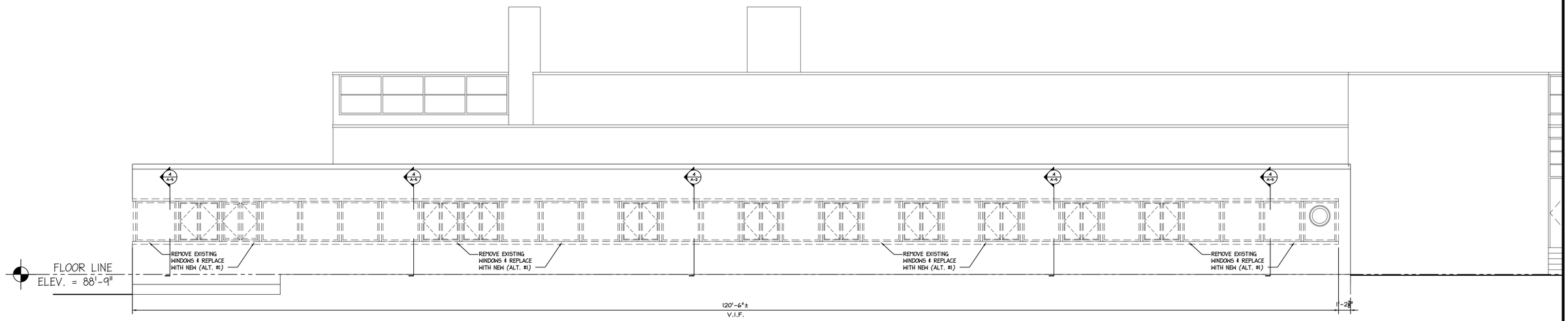
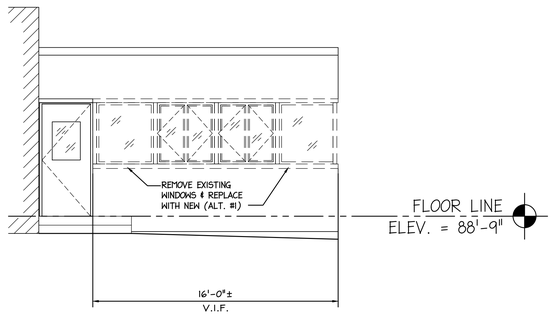


1 / D-3 FRONT ELEVATION (NORTHWEST AVENUE)
SCALE: 1/4" = 1'-0"



2 / D-3 PARTIAL SIDE ELEVATION (EAST PEACH STREET)
SCALE: 1/4" = 1'-0"



3 / D-3 PARTIAL SIDE ELEVATION (WEST PARK AVENUE)
SCALE: 1/4" = 1'-0"

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	MAR. 13TH 2026	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE:
DEMOLITION ELEVATIONS

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 10964 - PA ARCH #A-004014-E - CT ARCH 7324

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CHK'D.BY:	FM/DF

DRAWING NO:
D-3

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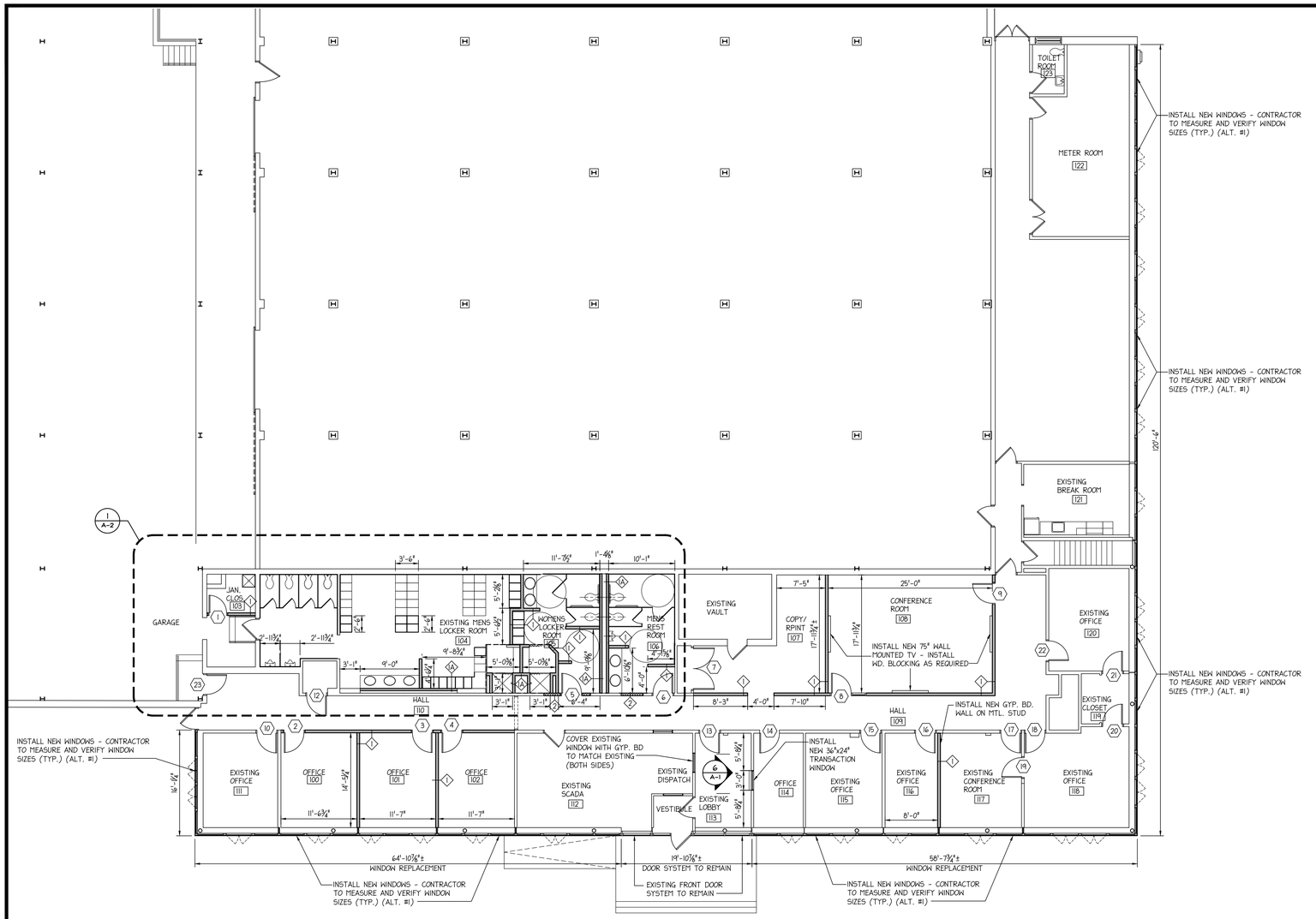
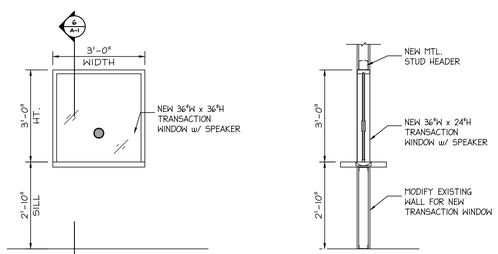


1 FLOOR PLAN
A-1 — SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL EXISTING DOOR LABELED ARE TO MATCH EXISTING
2. ALL WALLS TO BE PAINTED IN ALL SPACES IN SCOPE OF WORK
3.



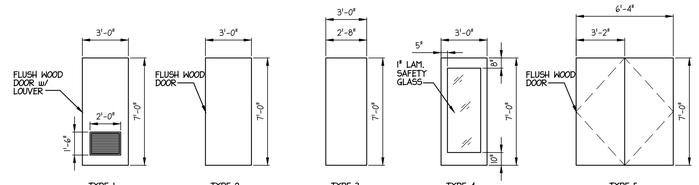
6 WINDOW ELEVATION & SECTION
A-1 — SCALE: 1/2" = 1'-0"

TRANSACTION WINDOW:

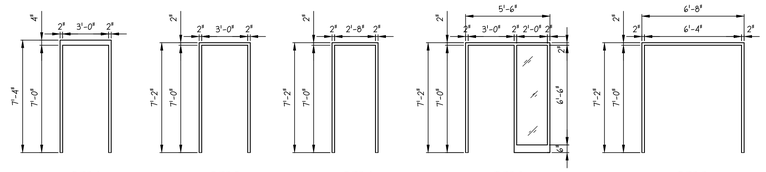
- QUICKSERV - MODEL T1-3636
- BUILT-IN DEAL TRAY w/ FLIP LID
- 1/4" TEMPERED GLASS w/ SPEAK HOLE
- ANODIZED DARK BRONZE FINISH
- MFR- QUICKSERV, INC.
  - HOUSTON, TX 77041
  - PHONE: 888-992-6172
- EQUALS WILL BE ACCEPTED

DOOR SCHEDULE

DOOR NO.	OPENING SIZE	TYPE	THICK	MAT.	FRAME TYPE	FRAME MAT.	HEAD	JAMB	SILL	HDW. SET	LABEL	REMARKS
1	2'-8" x 7'-0"	3	1 3/4"	MTL.	C	H.M.	1	1	-	1	-	
2	3'-0" x 7'-0"	2	1 3/4"	WD.	B	H.M.	2	2	-	2	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
3	3'-0" x 7'-0"	2	1 3/4"	WD.	B	H.M.	1	1	-	2	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
4	3'-0" x 7'-0"	2	1 3/4"	WD.	B	H.M.	1	1	-	2	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
5	3'-0" x 7'-0"	2	1 3/4"	WD.	A	H.M.	1	1	MBL	3	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
6	3'-0" x 7'-0"	2	1 3/4"	WD.	A	H.M.	2	2	MBL	3	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
7	(2) 3'-2" x 7'-0"	5	1 3/4"	WD.	E	H.M.	2	2	-	1	-	
8	3'-0" x 7'-0"	4	1 3/4"	WD.	D	H.M.	1	1	-	1	-	
9	3'-0" x 7'-0"	2	1 3/4"	WD.	B	H.M.	1	1	-	1	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
10	3'-0" x 7'-0"	2	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	DOOR TO BE UNDERCUT 1" FOR RETURN AIR FLOW
12	3'-0" x 7'-0"	2	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	1	-	
13	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	1	-	
14	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
15	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
16	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
17	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
18	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
19	3'-0" x 7'-0"	2	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	1	-	
20	3'-0" x 7'-0"	2	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	1	-	
21	3'-0" x 7'-0"	2	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	1	-	
22	3'-0" x 7'-0"	1	1 3/4"	WD.	EXIST.	EXIST.	EXIST.	EXIST.	-	2	-	
23	3'-0" x 7'-0"	3	1 3/4"	MTL.	EXIST.	EXIST.	EXIST.	EXIST.	-	4	-	



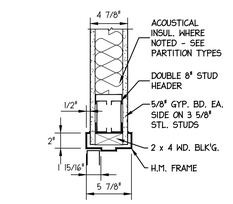
2 DOOR TYPES
A-1 — SCALE: 1/4" = 1'-0"



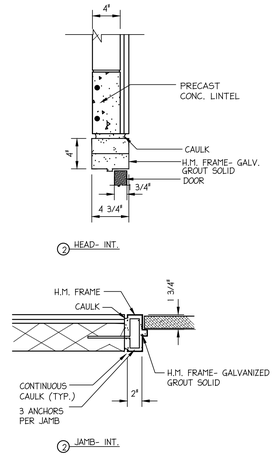
3 FRAME TYPES
A-1 — SCALE: 1/4" = 1'-0"

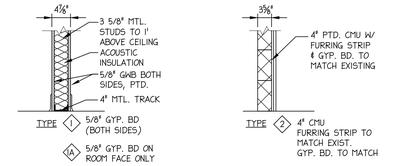
ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING	HEIGHT	REMARKS
100	OFFICE	CPT.	VINYL	PTD.	A.C.T.	9'-0"	
101	OFFICE	CPT.	VINYL	PTD.	A.C.T.	9'-0"	
102	OFFICE	CPT.	VINYL	PTD.	A.C.T.	9'-0"	
103	JANITORS CLOSET	EPOXY	EPOXY	EPOXY PTD.	EXIST.	-	
104	MENS LOCKER ROOM	EPOXY	EPOXY	EPOXY PTD.	GYP. BD.	8'-6"	
105	WOMENS LOCKER ROOM	C.T.	C.T.	C.T./ PTD.	GYP. BD.	8'-6"	WAINSCOT 5'-0" A.F.F.
106	MENS RESTROOM	C.T.	C.T.	C.T./ PTD.	GYP. BD.	8'-6"	WAINSCOT 5'-0" A.F.F.
107	COPY/ PRINT	CPT.	VINYL	PTD.	A.C.T.	9'-0"	
108	CONFERENCE ROOM	CPT.	VINYL	PTD.	A.C.T.	9'-0"	
109	HALL	EXIST.	EXIST.	EXIST.	A.C.T.	7'-8"	
110	HALL	EXIST.	EXIST.	EXIST.	A.C.T.	7'-8" & 9'-1"	CEILING HEIGHT VARIES (V.I.F.)
111	OFFICE	CPT.	EXIST.	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
112	SCADA	EXIST.	EXIST.	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
113	LOBBY	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
114	COPY / PRINT	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
115	OFFICE	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
116	OFFICE	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
117	CONFERENCE ROOM	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
118	OFFICE	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
119	CLOSET	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
120	OFFICE	CPT.	VINYL	PTD.	EXIST.	EXIST.	REPLACE CEILING TILE - GRID TO REMAIN
121	BREAK ROOM	LVT	VINYL	PTD.	EXIST.	EXIST.	CEILING TO REMAIN
122	METER ROOM	ALT. #2 - EPOXY	ALT. 2 EPOXY	EXIST.	EXIST.	EXIST.	(ALTERNATE #2)
123	TOILET ROOM	ALT. #2 - EPOXY	ALT. 2 EPOXY	EXIST.	EXIST.	EXIST.	(ALTERNATE #2)



4 HEAD & JAMB TYPES
A-1 — SCALE: 3/4" = 1'-0"





5 WALL TYPES
A-1 — SCALE: 3/4" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	MAR. 13TH 2026	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034
JOSEPH F. McKERNAN JR., R.A.
NJ ARCH. #: 10964 - PA ARCH. RA-014613-E - CT ARCH. 7104

SEAL:

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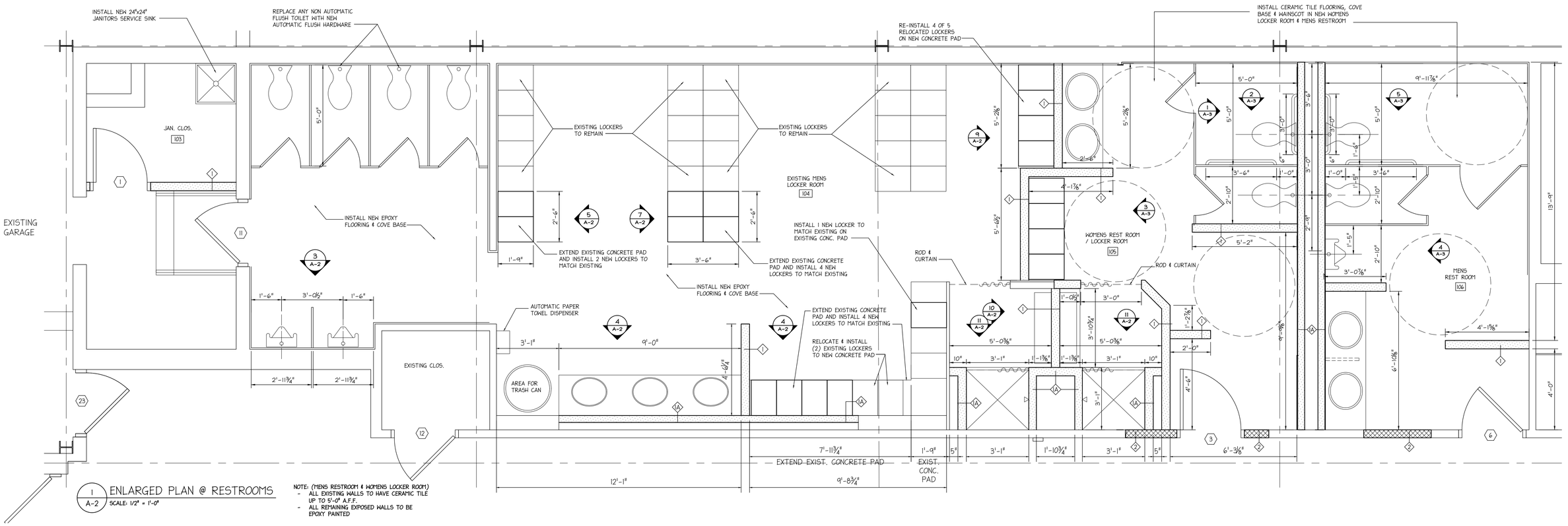
TITLE:
FLOOR PLAN, SCHEDULES & DETAILS

SCALE:	AS NOTED
PROJ.NO.:	1344
DATE:	4/10/25
REVD.:	
DRAWN BY:	GES
CHKD.BY:	MF/DF

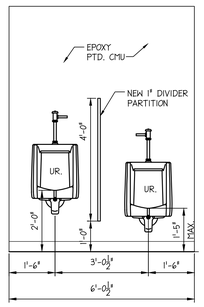
DRAWING NO:
A-1

PLOT DATE & TIME: Mar 12, 2026 - 11:32am
FILE PATH: J:\1344_Vineland-MEU\CAD\Working Drawings\1344 Vineland Electric Working Drawings.dwg

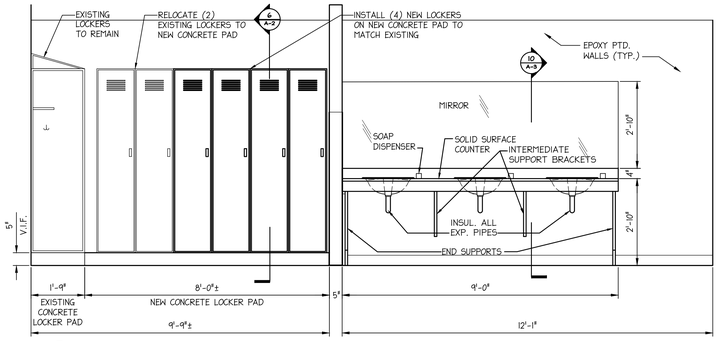


1 / A-2 ENLARGED PLAN @ RESTROOMS
SCALE: 1/2" = 1'-0"

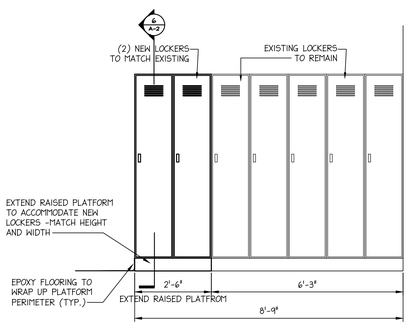
NOTE: (MENS RESTROOM & WOMENS LOCKER ROOM)
- ALL EXISTING WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



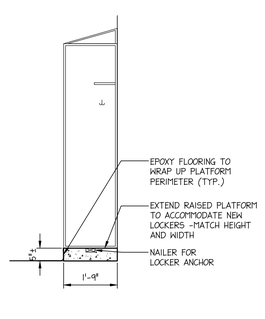
3 / A-2 INTERIOR ELEVATION @ URINALS
SCALE: 1/2" = 1'-0"



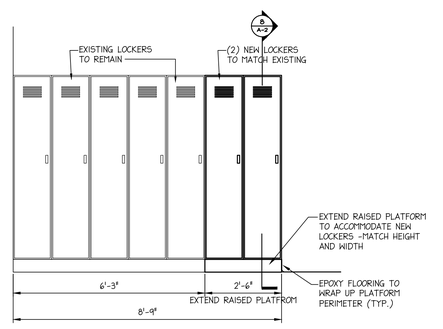
4 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



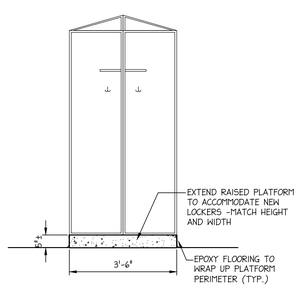
5 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



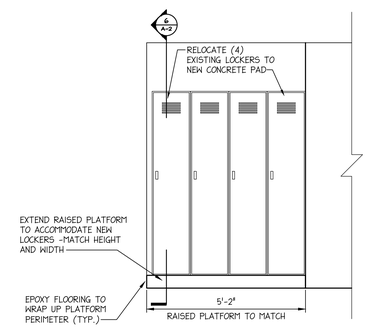
6 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



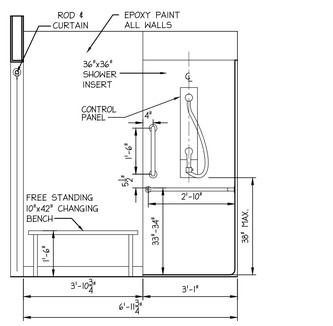
7 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



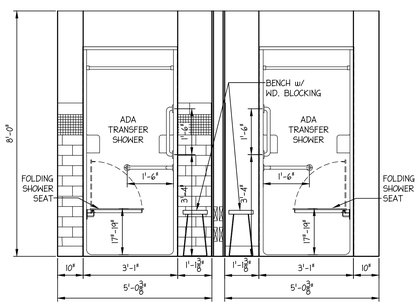
8 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



9 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



10 / A-2 INTERIOR ELEVATION @ MENS LOCKER ROOM
SCALE: 1/2" = 1'-0"



11 / A-2 INTERIOR ELEVATION @ MENS & WOMENS SHOWER
SCALE: 1/2" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	MAR. 13TH 2026	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: ENLARGED PLANS & INTERIOR ELEVATIONS

JOSEPH F. McKERNAN JR., R.A.
N.J. ARCH. #: 20964 - PA. ARCH. #: RA-014421-X - CT. ARCH. TECH

SEAL:

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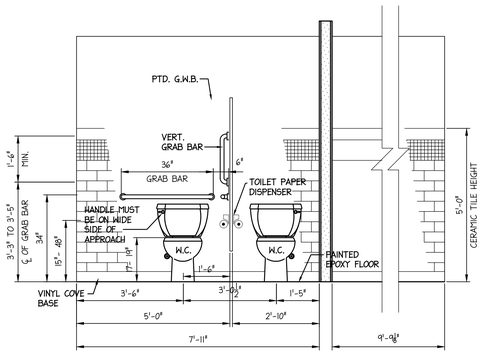
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 4/10/25
REV'D.:
DRAWN BY: GES
CHKD.BY: FM/DF

DRAWING NO: A-2

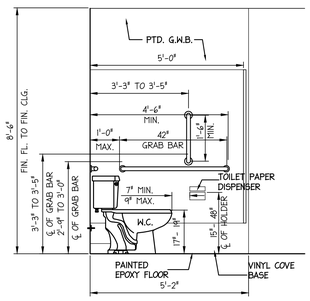
PLOT DATE & TIME: Mar 12, 2026 - 11:32am
FILE PATH: J:\1344_Vineland-MEU\CAD\Working Drawings\1344 Vineland Electric Working Drawings.dwg



1 A-3 INTERIOR ELEVATION @ WOMENS RESTROOM

SCALE: 1/2" = 1'-0"

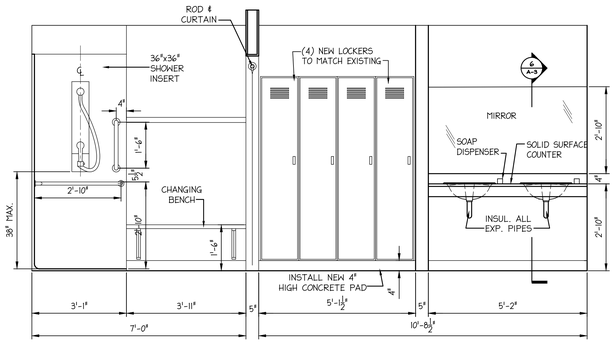
NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



2 A-3 INTERIOR ELEVATION @ WOMENS RESTROOM

SCALE: 1/2" = 1'-0"

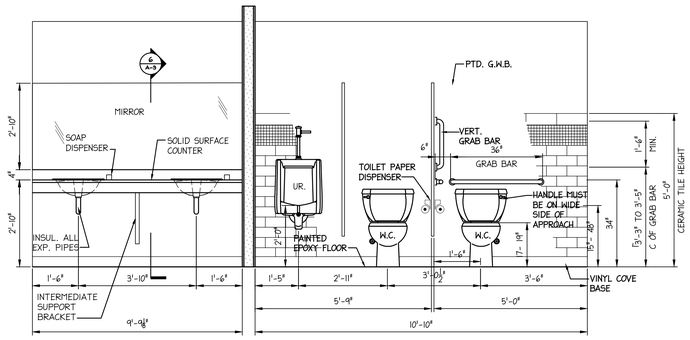
NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



3 A-3 INTERIOR ELEVATION @ WOMENS RESTROOM

SCALE: 1/2" = 1'-0"

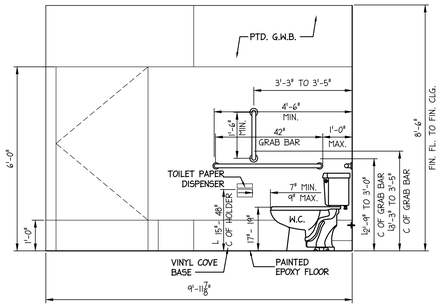
NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



4 A-3 INTERIOR ELEVATION @ MENS RESTROOM

SCALE: 1/2" = 1'-0"

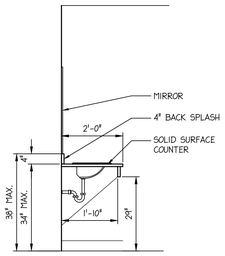
NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



5 A-3 INTERIOR ELEVATION @ MENS RESTROOM

SCALE: 1/2" = 1'-0"

NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED



6 A-3 SECTION @ SINK (TYPICAL)

SCALE: 1/2" = 1'-0"

NOTE:
- ALL WALLS TO HAVE CERAMIC TILE UP TO 5'-0" A.F.F.
- ALL REMAINING EXPOSED WALLS TO BE EPOXY PAINTED

No.	DATE	DESCRIPTION	REV'D BY
	MAR. 13TH 2026	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE:
ENLARGED PLANS & INTERIOR ELEVATIONS

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 21984 - PA ARCH RA-014613-E - CT ARCH 7324

SEAL:

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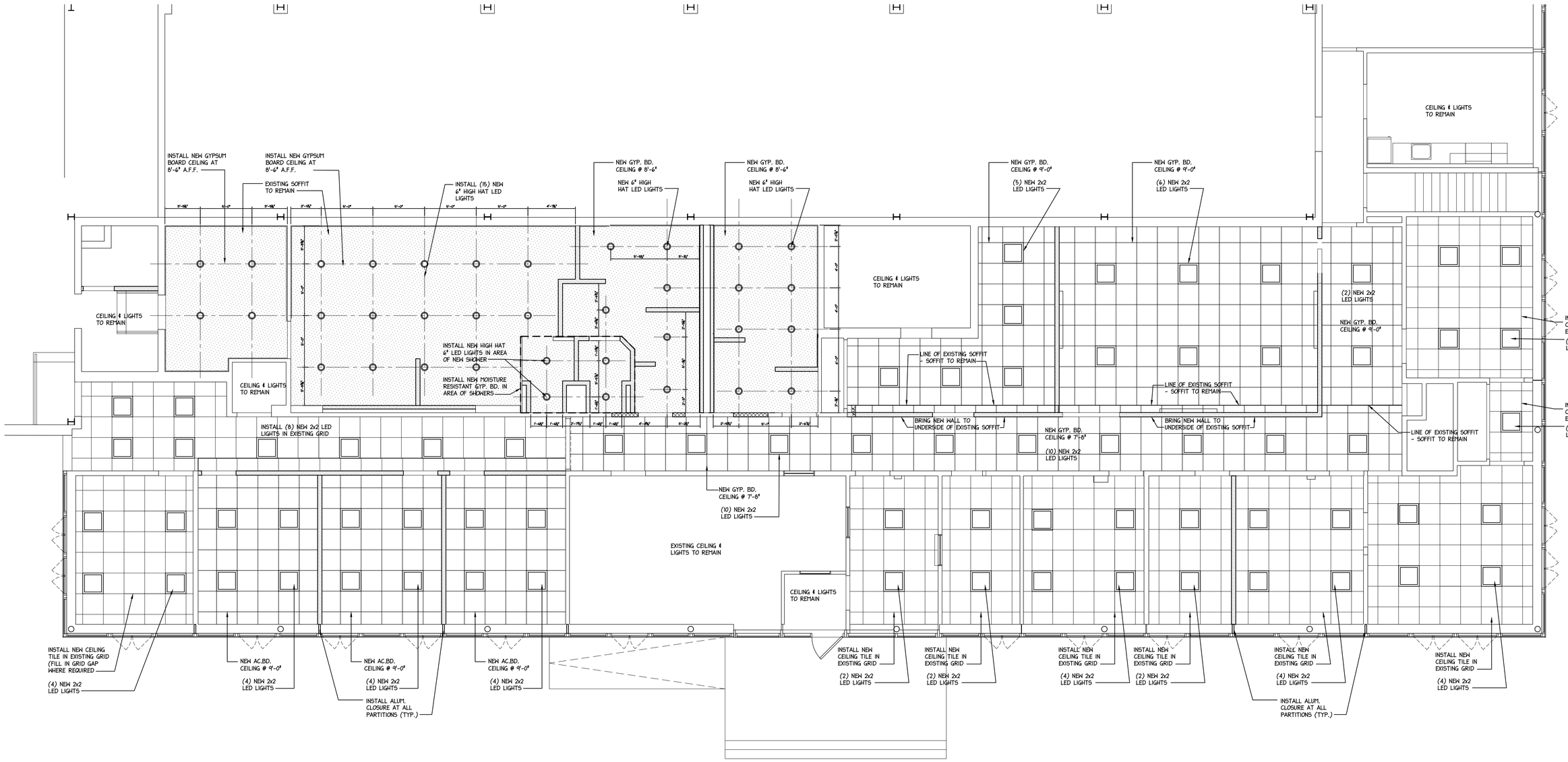
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 4/10/25
REVD.:
DRAWN BY: GES
CHKD.BY: TFP/DF

DRAWING NO.
A-3

PLOT DATE & TIME: Mar 12, 2026 - 11:32am
FILE PATH: J:\1344_Vineland-MEU\CAD\Working Drawings\1344 Vineland Electric Working Drawings.dwg



1 / A-4 REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

NOTE:
WHERE EXISTING CEILING GRID REMAINS - ADD ADDITIONAL "T" AT THE LIGHT FIXTURES TO SUPPORT NEW 2x2 LIGHTS

No.	DATE	DESCRIPTION	REV'D BY
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VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 10964 - PA ARCH #A-004014-E - CT ARCH 7324

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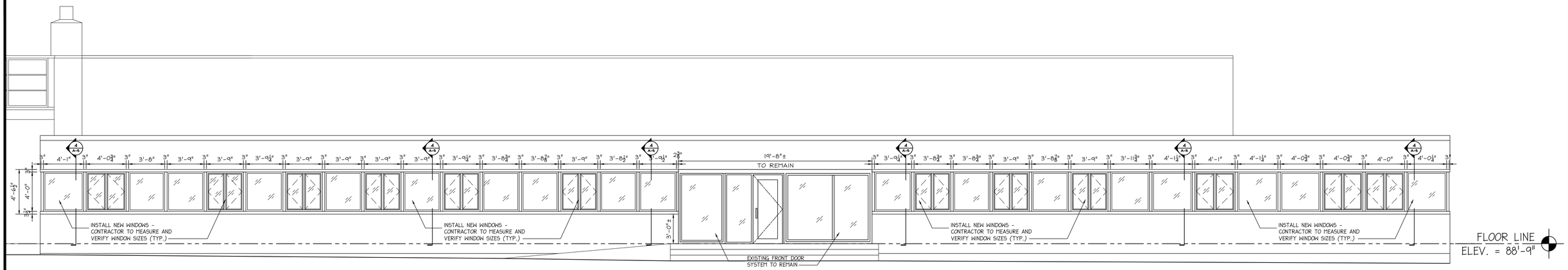
TITLE:
REFLECTED CEILING PLAN

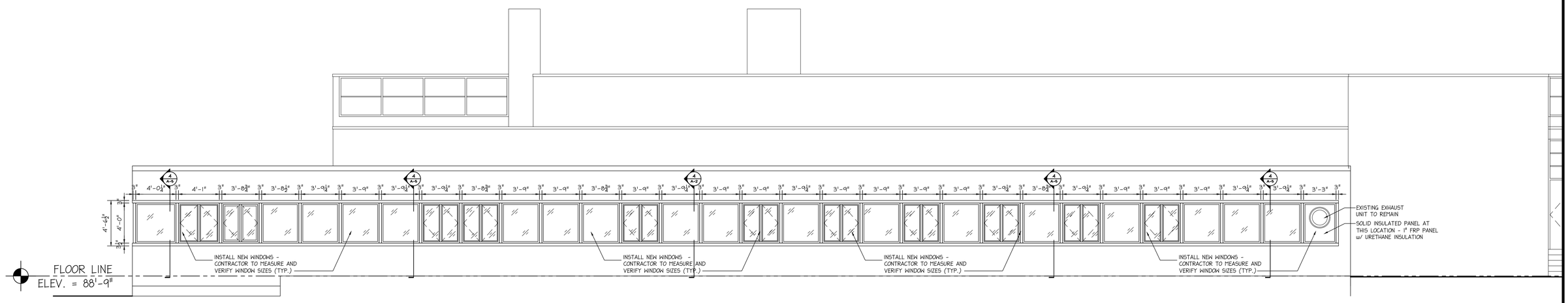
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 4/10/25
REV'D.:
DRAWN BY: GES
CHK'D.BY: FM/DF

DRAWING NO:
A-4

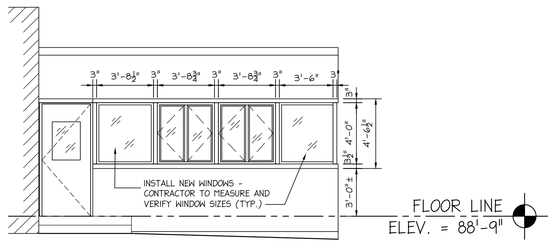
PLOT DATE & TIME: Mar 12, 2026 - 11:32am
FILE PATH: J:\1344_Vineland-MEU\CAD\Working Drawings\1344 Vineland Electric Working Drawings.dwg



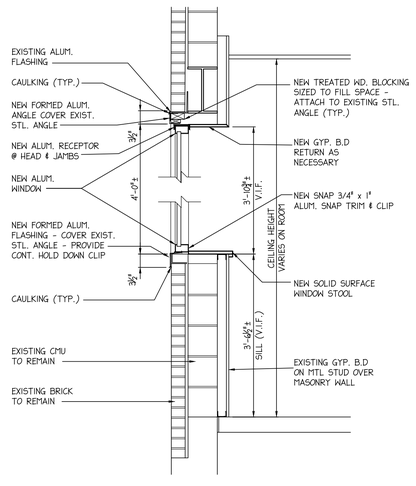
1 / A-5 (ALTERNATE #1) FRONT ELEVATION (NORTHWEST AVENUE)
SCALE: 1/4" = 1'-0"



2 / A-5 (ALTERNATE #1) PARTIAL SIDE ELEVATION (EAST PEACH STREET)
SCALE: 1/4" = 1'-0"



3 / A-5 (ALTERNATE #1) PARTIAL SIDE ELEVATION (WEST PARK AVENUE)
SCALE: 1/4" = 1'-0"



4 / A-5 (ALTERNATE #1) DETAIL @ WINDOW SILL & HEAD
SCALE: 3/4" = 1'-0"

No.	DATE	DESCRIPTION	REV'D BY
	MAR. 13TH 2026	ISSUED FOR BID	

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BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE:
(ALTERNATE #1)
ELEVATIONS & DETAILS

JOSEPH F. McKERNAN JR., R.A.
NJ ARCH #: 10964 - PA ARCH #A-014451-E - CT ARCH 7324

SEAL:

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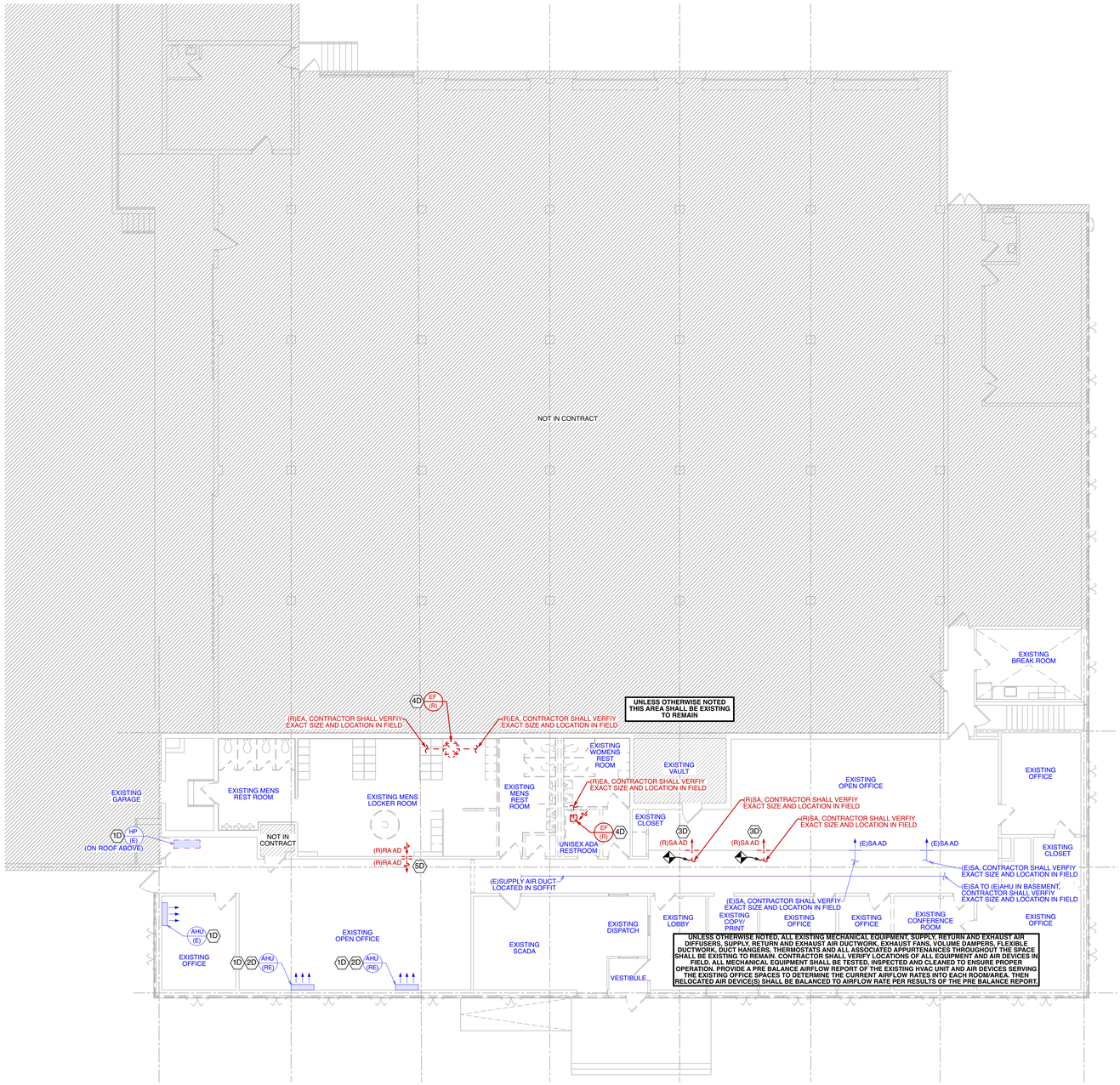
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 4/10/25
REV'D.:
DRAWN BY: GES
CHK'D.BY: FM/DF

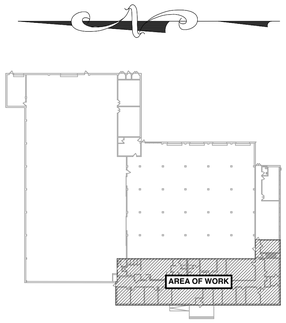
DRAWING NO.
A-5

PLOT DATE & TIME: Mar 12, 2026 - 11:32am
FILE PATH: J:\1344_Vineland-MEU\CAD\Working Drawings\1344 Vineland Electric Working Drawings.dwg



1 PARTIAL GROUND FLOOR DEMOLITION MECHANICAL PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

NOT TO SCALE

DRAWING SYMBOLS

(E)	EXISTING MECHANICAL WORK TO REMAIN
(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(N)	NEW MECHANICAL WORK
	EXISTING MECHANICAL WORK TO REMAIN
	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
	NEW MECHANICAL WORK
	POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
	POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED

EXISTING EQUIPMENT NOTES

1. ALL EXISTING HVAC EQUIPMENT TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING LUBRICATION, ADJUSTMENT OR REPLACEMENT OF PARTS, REPLACEMENT OF VALUES AND GAUGES AND CHECKING FOR PROPER OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD MAJOR WORK ON THE EQUIPMENT BE REQUIRED, THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
2. ALL EXISTING CONTROLS TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING CALIBRATION, ADJUSTMENT AND VERIFICATION OF SEQUENCE OF OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD CONTROLS NEED REPLACEMENT OR OTHER SIGNIFICANT REPAIRS THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
3. CONTRACTOR SHALL CARRY A CONTINGENCY IN THEIR PRICE TO PERFORM THESE REPAIRS, IF REPAIR WORK IS APPROVED, THE CONTRACTOR SHALL DRAW AGAINST CONTINGENCY, IF REPAIR WORK IS NOT APPROVED / REQUIRED, CONTINGENCY SHALL BE CREDITED BACK TO OWNER.

EXISTING CONDITIONS NOTES

1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM DECEMBER 5, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

DEMOLITION GENERAL NOTES

1. REMOVE DESIGNATED ELEMENTS AS SHOWN ON DRAWINGS.
2. ALL MECHANICAL EQUIPMENT AND ASSOCIATED APPURTENANCES DESCRIBED SHALL BE REMOVED AND DEMOLISHED UNLESS NOTED OTHERWISE.
3. ALL ELECTRICAL WIRING SHALL BE DEMOLISHED BACK TO MAIN PANEL UNLESS INDICATED TO BE RECONNECTED OR TO REMAIN.
4. COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.
5. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
6. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
7. ERECT AND MAINTAIN TEMPORARY PARTITIONS TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SMOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
8. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
9. ALL SYSTEMS CONTAINING REFRIGERANTS SHALL BE EVACUATED FOR REFRIGERANT RECYCLING PRIOR TO DEMOLITION.
10. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN CONDITION AT THE END OF EACH DAY.
11. COORDINATE ALL DEMOLITION WORK WITH FACILITIES MANAGEMENT PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
12. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CENTER MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS WORK TO CONFIRM THE EXTENT OF DEMOLITION.
13. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE TENANT SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
14. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

DEMOLITION SHEET NOTES

1D REFER TO "EXISTING EQUIPMENT NOTES" #1, #2, & #3 ON THIS SHEET FOR FUTHER INFORMATION.

2D CONTRACTOR SHALL DEMOLISH AND REMOVE INDICATED AIR DEVICE AND ASSOCIATED BRANCH DUCTWORK IN ITS ENTIRETY. CUT AND CAP AT EXISTING TO REMAIN SUPPLY DUCT MAIN LOCATED IN SOFFIT ABOVE CORRIDOR. REFER TO NEW PLANS FOR FURTHER INFORMATION.

3D CONTRACTOR SHALL REMOVE EXISTING TO BE RELOCATED AIR DEVICE FROM EXISTING DUCTWORK. CONTRACTOR SHALL CAP AND SEAL EXISTING DUCTWORK AS REQUIRED. REFER TO NEW PLANS FOR FURTHER INFORMATION. CONTRACTOR SHALL KEEP EXISTING TO BE RELOCATED AIR DEVICE IN A SAFE LOCATION FOR THE DURATION OF DEMOLITION.

4D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING EXHAUST FAN AS SHOWN. ALL WORK NOT BEING REUSED SHALL BE DEMOLISHED, REMOVED AND MADE SAFE AS REQUIRED. ALL EXISTING EXHAUST DUCTWORK, WIRING AND COMPONENTS SHALL BE DEMOLISHED AND REMOVED. ALL WALL/ ROOF PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ ARCHITECT.

5D CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING THROUGH WALL TRANSFER GRILLES AS SHOWN. ALL WALL PENETRATIONS SHALL BE PATCHED/SEALED IN A MANOR ACCEPTABLE TO THE LANDLORD/ARCHITECT.

No.	DATE	DESCRIPTION	REV'D BY
1	022726	ISSUED FOR BID	

REVISIONS

APPROVAL

PROJECT

VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS

415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 310
Trevose, PA 19053
O: (215) 322-7710
F: (215) 322-7711
www.holsteinwhite.com

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR DEMOLITION MECHANICAL PLAN

DRAWINGS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

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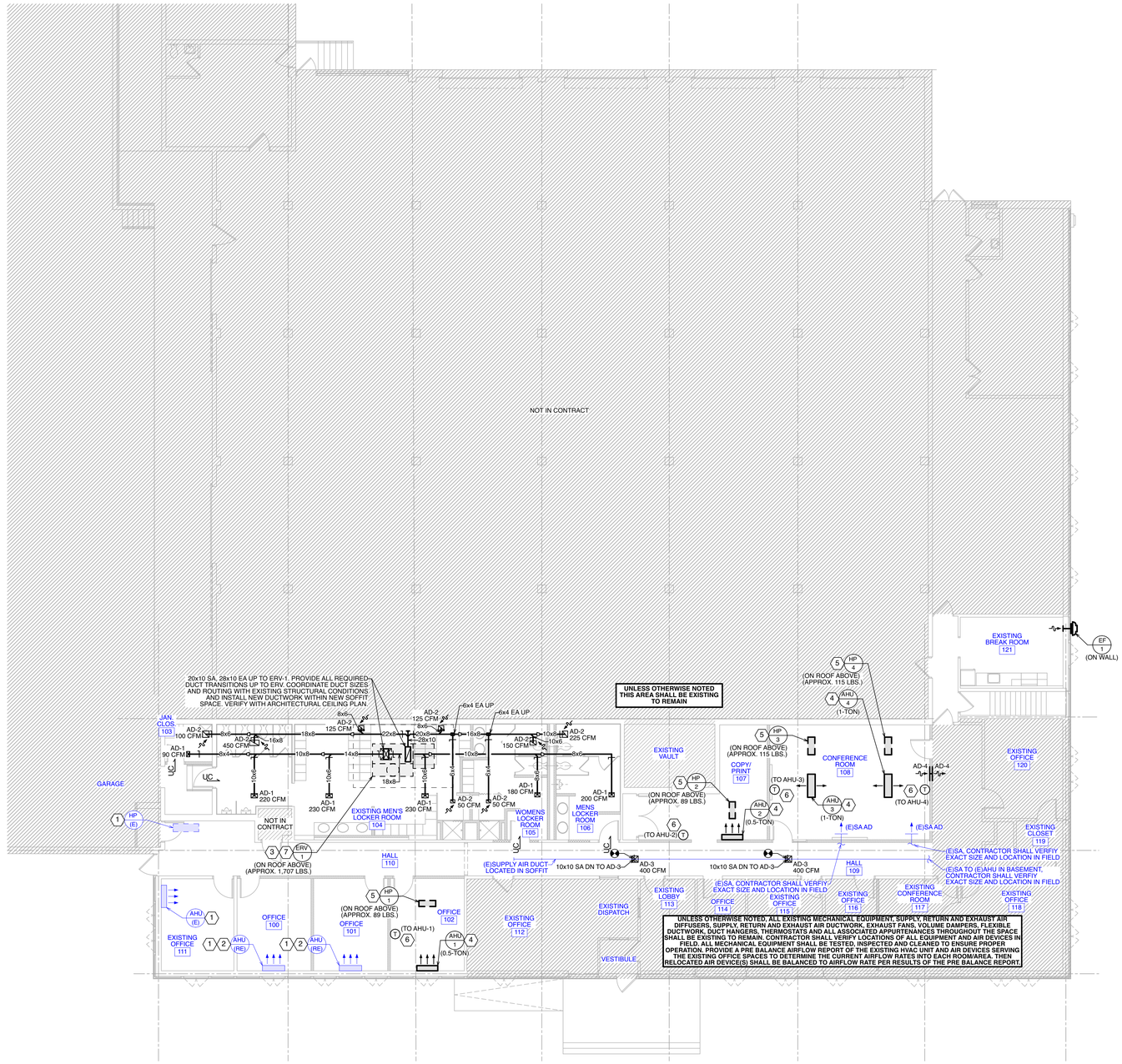
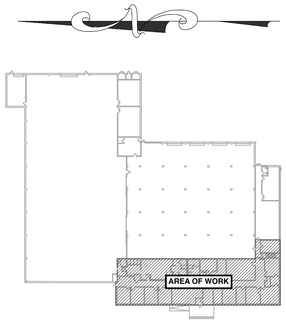
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.:
DRAWN BY: RY
CHKD BY: SW

DRAWING NO: DM-1.0



1 PARTIAL GROUND FLOOR MECHANICAL PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

NOT TO SCALE

DRAWING SYMBOLS

(E)	EXISTING MECHANICAL WORK TO REMAIN
(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(N)	NEW MECHANICAL WORK
	EXISTING MECHANICAL WORK TO REMAIN
	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
	NEW MECHANICAL WORK
	POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
	POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED

EXISTING EQUIPMENT NOTES

1. ALL EXISTING HVAC EQUIPMENT TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING LUBRICATION, ADJUSTMENT OR REPLACEMENT OF PARTS, REPLACEMENT OF VALUES AND GAUGES AND CHECKING FOR PROPER OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD MAJOR WORK ON THE EQUIPMENT BE REQUIRED, THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
2. ALL EXISTING CONTROLS TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING CALIBRATION, ADJUSTMENT AND VERIFICATION OF SEQUENCE OF OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD CONTROLS NEED REPLACEMENT OR OTHER SIGNIFICANT REPAIRS THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
3. CONTRACTOR SHALL CARRY A CONTINGENCY IN THEIR PRICE TO PERFORM THESE REPAIRS, IF REPAIR WORK IS APPROVED. THE CONTRACTOR SHALL DRAW AGAINST CONTINGENCY, IF REPAIR WORK IS NOT APPROVED / REQUIRED, CONTINGENCY SHALL BE CREDITED BACK TO OWNER.

EXISTING CONDITIONS NOTES

1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM DECEMBER 5, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

GENERAL NOTES

1. ALL BRANCH DUCTWORK SHALL HAVE BALANCING DAMPERS.
2. COORDINATE ALL AIR DEVICES WITH LIGHTING AND REFLECTED CEILING PLANS.
3. IT IS THE INTENT TO MAINTAIN THE CEILING HEIGHTS AS SHOWN ON THE REFLECTED CEILING PLANS.
4. DUCTWORK SHOULD BE INSTALLED AS TIGHT AS POSSIBLE TO THE STRUCTURAL FRAMING AND DECK.
5. MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT, INSTALLED BY G.C. COORDINATED ALL LOCATIONS AND SIZES WITH ARCHITECT PRIOR TO INSTALLATION.
6. ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED WITH RCD#8 LOW-VOC MASTIC. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA'S SEAL CLASS "B".
7. ALL DUCTWORK SIZES SHOWN ON PLAN ARE CLEAR I.D. DIMENSIONS. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED.
8. CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF CUTTING AND PATCHING WITH CURRENT ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY. COORDINATE ALL WORK WITH LANDLORD PRIOR TO CONSTRUCTION.
9. ALL INTAKE AIR OPENINGS SHALL BE A MINIMUM OF 10'-0" FROM ALL EXHAUST, SANITARY VENT AND FLUE LOCATIONS.

SHEET NOTES

1. REFER TO "EXISTING EQUIPMENT NOTES" 1, 2 & 3 ON THIS SHEET FOR FURTHER INFORMATION.
2. CONTRACTOR SHALL REINSTALL EXISTING TO BE RELOCATED WALL MOUNTED DUCTLESS AIR HANDLER UNIT AFTER NEW CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL INSPECT AND TEST EXISTING TO BE RELOCATED WALL MOUNTED DUCTLESS AIR HANDLER UNIT AND ENSURE IT IS FULLY FUNCTIONAL AFTER REINSTALLATION. REFER TO EXISTING EQUIPMENT NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION AND ELEVATION OF WALL MOUNTED DUCTLESS AIR HANDLER UNIT WITH ARCHITECT.
3. COORDINATE SUPPLY AIR AND RETURN AIR DUCT DROPS WITH EXISTING STRUCTURE AND ROOFING CONTRACTOR. REFER TO GENERAL NOTE #8.
4. REFER TO THE FOLLOWING NOTES FOR EACH AHU:
   - RUN REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO CORRESPONDING OUTDOOR HEAT PUMP UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT.
   - CONDENSATE FROM AHU TO DRAIN INDIRECTLY TO MOP RECEPTOR. COORDINATE FINAL LOCATION IN FIELD AND WITH OWNER. PROVIDE LITTLE GIANT CONDENSATE PUMP (MIN: VCMA-15) IF NECESSARY. COORDINATE WITH ELECTRICAL CONTRACTOR.
   - COORDINATE THE FINAL LOCATION OF AHU W/ ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.
5. REFER TO THE FOLLOWING NOTES FOR EACH HP:
   - COORDINATE THE FINAL LOCATION OF HP W/ ARCHITECT AND OWNER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.
   - ROUTE REFRIGERANT PIPING TO CORRESPONDING AHU. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT AND TENANT FLOORS ABOVE.
   - HEAT PUMP SHALL BE MOUNTED ON PATE EQUIPMENT RAILS.
   - PROVIDE SERVICE DISCONNECT PER MANUFACTURER'S RECOMMENDATIONS
6. INDICATES LOCATION OF NEW SEVEN-DAY ELECTRONIC PROGRAMABLE THERMOSTAT WITH OCCUPIED AND UNOCCUPIED CAPABILITIES FOR INDICATED AHU. PROVIDE NON-TAMPER TRANSPARENT ENCLOSURE FOR THERMOSTAT. COORDINATE ENCLOSURE AND FINAL LOCATION OF THERMOSTAT WITH ARCHITECT/TENANT PRIOR TO INSTALLATION.
7. COORDINATE FINAL LOCATION OF ALL ROOFTOP MECHANICAL EQUIPMENT WITH LANDLORD. MECHANICAL EQUIPMENT ON ROOF SHALL BE MOUNTED ON ROOF CURB AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. MAINTAIN 10'-0" MINIMUM SET BACK REQUIREMENT OF ROOFTOP EQUIPMENT AS REQUIRED BY CODE. IF CODE REQUIRED SET BACK CANNOT BE MAINTAINED, CONTRACTOR SHALL PROVIDE SAFETY RAILINGS AS REQUIRED BY CODE. ALL SAFETY RAILING COSTS TO BE BILLED AGAINST PROJECT ALLOWANCE, IF REQUIRED.

No.	DATE	DESCRIPTION	REV'D BY
		REVISIONS	
1	022726	ISSUED FOR BID	

APPROVAL

PROJECT

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VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 202
Trevose, PA 19053
O: (215) 322-7719
F: (215) 322-7720
www.holsteinwhite.com

SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

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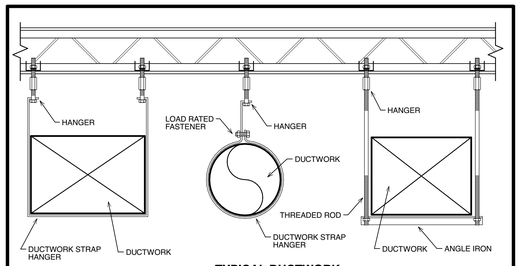
DRAWING ARCHITECTS & ASSOC. COPYRIGHT 2025

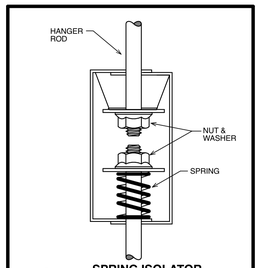
TITLE: PARTIAL GROUND FLOOR MECHANICAL PLAN

SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.: BA
DRAWN BY: RY
CHK'D BY: SW

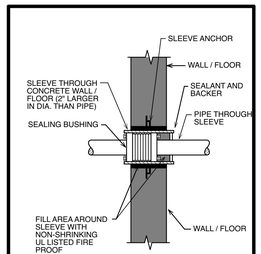
DRAWING NO: **M-1.0**



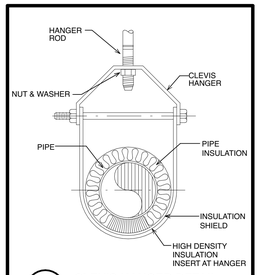
1 TYPICAL DUCTWORK HANGING DETAIL
NOT TO SCALE



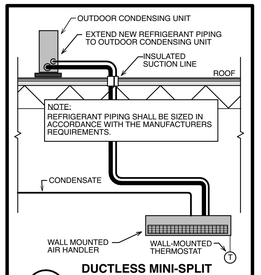
2 SPRING ISOLATOR DETAIL
NOT TO SCALE



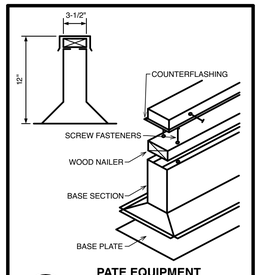
3 PIPE WALL/FLOOR PENETRATION DETAIL
NOT TO SCALE



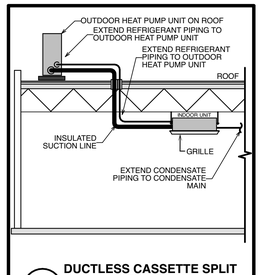
4 CLEVIS HANGER DETAIL
NOT TO SCALE



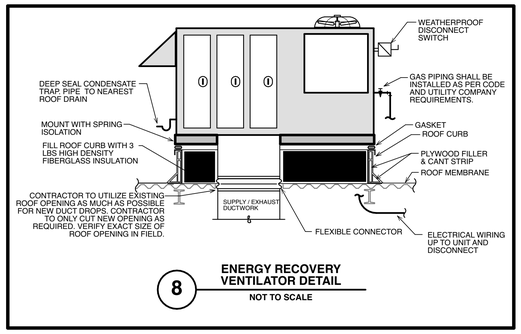
5 DUCTLESS MINI-SPLIT SYSTEM DETAIL
NOT TO SCALE



6 PATE EQUIPMENT SUPPORT RAIL DETAIL
NOT TO SCALE



7 DUCTLESS CASSETTE SPLIT SYSTEM DETAIL
NOT TO SCALE



8 ENERGY RECOVERY VENTILATOR DETAIL
NOT TO SCALE

AIR DEVICE SCHEDULE

No.	CFM	Size	Neck	Mfgr.	Model #	Finish	Damper	Mtd. Surface	Material	Remarks
AD-1	90	10x8	8x4	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	SA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	180-200	10x8	8x6	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	SA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	220-230	12x8	10x6	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	SA Grille w/ 1/2" Blade Spacing @ 35° Deflection
AD-2	50	8x6	6x4	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	100-125	10x8	8x6	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	150	12x8	10x6	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	225	12x10	10x8	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection
	450	18x10	16x8	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection
AD-3	Assume 400	12x12	10x10	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	SA Grille w/ 1/2" Blade Spacing @ 35° Deflection
AD-4	Assume 800	26x10	24x8	Krueger	S585	Note 3	Yes	Ceiling	Aluminum	RA Grille w/ 1/2" Blade Spacing @ 35° Deflection

Air Device Notes:
1. Unless otherwise indicated, provide duct connection the full size of duct shown on drawing.
2. Provide air device frames to suit wall and ceiling construction.
3. Color and finish of all grilles, registers and diffusers shall be coordinated with Architect.

MATERIAL AND INSULATION SCHEDULE

	Material		Insulation				Remarks
	Basis of Design	Alternate	Basis of Design	Type	Wall (in.)	Vapor Barrier	
Ductwork, Supply	Galvanized Steel	------	Certainteed	Duct Wrap	1-1/2	Integral	Construction per SMACNA standards. External wrap insulation.
Ductwork, Exhaust	Galvanized Steel	------	------	------	------	------	
Refrigerant Piping	"ACR" Copper	------	Armacell	Armacell	1-1/2	Yes	Insulate per Manufacturer's Requirements, Provide UV Protection where exposed to sunshine
Condensate Piping	Sch. 40 PVC (Solid Wall)	Type "L" Copper	Rubatex	R-180FS	1/2	Integral	Insulate Trap Only, Provide UV Protection where exposed to sunshine

*Refer to Equipment note 1.1.2 in Mechanical Drawing Notes on this sheet for further information.

MECHANICAL SYMBOLS, INDICATIONS & ABBREVIATIONS

- XX / X — EQUIPMENT DESIGNATION TAG
- SUPPLY AIR DIFFUSER (CEILING)
- SUPPLY AIR DIFFUSER (SIDEWALL)
- SUPPLY AIR DIFFUSER (LINEAR, CEILING)
- SUPPLY AIR DIFFUSER (LINEAR, WALL)
- RETURN AIR DIFFUSER (CEILING)
- EXHAUST AIR DIFFUSER (CEILING)
- RETURN/EXHAUST AIR DIFFUSER (SIDEWALL)
- BRANCH DAMPER
- VOLUME DAMPER
- 2" DOOR UNDERCUT
- T — THERMOSTAT
- S — DUCT MOUNTED SMOKE DETECTOR
- DUCT SIZE TRANSITION
- EXHAUST FAN
- FLEXIBLE DUCTWORK
- DUCT W/ ACOUSTICAL LINING
- RETURN/EXHAUST AIR DUCT UP
- RETURN/EXHAUST AIR DUCT DN
- SUPPLY/MAKE-UP AIR DUCT UP
- SUPPLY/MAKE-UP AIR DUCT DN
- M — MOTORIZED DAMPER
- CD — CONDENSATE DRAIN
- DIRECTION OF FLOW
- PIPE TURNING DOWN
- PIPE TURNING UP
- CAPPED FLANGE

AD	AIR DEVICE
A.F.F.	ABOVE FINISHED FLOOR
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
EA	EXHAUST AIR
EF	EXHAUST FAN
FFH	FAN FORCED HEATER
M.O.D.	MOTORIZED DAMPER
OA	OUTSIDE AIR
RA	RETURN AIR
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
UC	UNDERCUT

- (E) EXISTING MECHANICAL WORK TO REMAIN
- (R) EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- (RE) EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
- (N) NEW MECHANICAL WORK
- EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK
- POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
- POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED

MINI-SPLIT SYSTEM HEAT PUMP SCHEDULE (1-WAY CASSETTE)

Indoor Unit Designation	AHU-3 & AHU-4
Basis of Design	MITSUBISHI
Model Number	MLZ-KX12NL
Orientation	Wall Mounted
Airflow (Lo to Hi) (CFM)	212 - 258 - 332
Entering Air Temp. (°F db / °F wb)	80 / 67
Drive Type	Direct
Dimensions (W x D x H) (in.)	43-3/8 x 14-3/16 x 7-5/16
Weight (lbs.)	34
Service	Refer to Plans
Cooling Performance	
Rated Cooling Capacity (BTU/hr.)	12,000
Maximum Cooling Capacity (BTU/hr.)	12,000
Minimum Cooling Capacity (BTU/hr.)	2,900
Indoor Unit Electrical	**208/230 / 1Ø / 60**
Power Supply	Powered by Outdoor
Outdoor Unit Designation	**HP-3 & HP-4**
Basis of Design	MITSUBISHI
Model Number	SUZ-AA12NLHZ
Dimensions (W x D x H) (in.)	33-1/16 x 13 x 34-5/8
Weight (lbs.)	115
Nominal Tonnage	1.0
SEER2 / EER2	16.7 / 13.3
Refrigerant Type	R-454B
Refrigerant Line Size (Liquid / Vapor)	Sized by Manufacturer
Outdoor Unit Electrical	**208V / 1Ø / 60Hz**
Minimum Circuit Ampacity (Amps)	25
Max. Over-current Protection (Amps)	30
Accessories & Options	
Integral Standard Disconnect Switch	Yes
Integral Condensate Drain Pump	Yes
Low Ambient Controls	Yes
R-454B Refrigerant	Yes
Programmable, Wired Thermostat	Yes

Notes
1. CONTRACTOR SHALL INSTALL AND WIRE ALL ACCESSORIES SHIPPED LOOSE BY VENDOR.
2. CONTRACTOR SHALL INSTALL THE SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.
3. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR MORE INFORMATION AND PROCEDURES.
4. ALL REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.

MINI-SPLIT SYSTEM HEAT PUMP SCHEDULE (WALL MOUNTED)

Indoor Unit Designation	AHU-1 & AHU-2
Basis of Design	MITSUBISHI
Model Number	MSZ-FX06NL
Orientation	Wall Mounted
Airflow (Lo to Hi) (CFM)	177 - 293 - 420
Entering Air Temp. (°F db / °F wb)	80 / 67
Drive Type	Direct
Dimensions (W x D x H) (in.)	39-9/32 x 9-3/4 x 12
Weight (lbs.)	32
Service	Refer to Plans
Cooling Performance	
Rated Cooling Capacity (BTU/hr.)	6,000
Maximum Cooling Capacity (BTU/hr.)	14,000
Minimum Cooling Capacity (BTU/hr.)	1,700
Indoor Unit Electrical	**208/230 / 1Ø / 60**
Power Supply	Powered by Outdoor
Outdoor Unit Designation	**HP-1 & HP-2**
Basis of Design	MITSUBISHI
Model Number	MUZ-FX06NLHZ
Dimensions (W x D x H) (in.)	31-1/2 x 11-1/4 x 28-1/8
Weight (lbs.)	89
Nominal Tonnage	0.5
SEER2 / EER2	35 / 21.45
Refrigerant Type	R-454B
Refrigerant Line Size (Liquid / Vapor)	Sized by Manufacturer
Outdoor Unit Electrical	**208V / 1Ø / 60Hz**
Minimum Circuit Ampacity (Amps)	12
Max. Over-current Protection (Amps)	15
Accessories & Options	
Integral Standard Disconnect Switch	Yes
Integral Condensate Drain Pump	Yes
Low Ambient Controls	Yes
R-454B Refrigerant	Yes
Programmable, Wired Thermostat	Yes

Notes
1. CONTRACTOR SHALL INSTALL AND WIRE ALL ACCESSORIES SHIPPED LOOSE BY VENDOR.
2. CONTRACTOR SHALL INSTALL THE SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.
3. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR MORE INFORMATION AND PROCEDURES.
4. ALL REFRIGERANT PIPING SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.

EXHAUST FAN SCHEDULE

Unit Designation	EF-1
Basis of Design	Cook
Model Number	101W11D
CFM	160
E.S.P. (in. W.C.)	0.408
Drive Type	Direct
Dim (L x Dia.)(in.)	21-3/8" x 25-3/16"Ø
Weight (lbs.)	25
Location	Wall Mounted
Service	Refer to Plans
Electrical	**115/ 1Ø/ 60**
Power HP	0.036
Motor HP	0.167
Accessories	
Backdraft Damper	Yes
Roof Curb	No
Wall Cap	No
Roof Cap	No
Exhaust Grille	No
Vibration Isolation Kit	Yes
Standard Disconnect	Yes
Control	
Speed Controller	Yes
Time Delay Switch	No
Interlock	Interconnect w/ Wall Switch Coordinate w/ E.C.

PIPING AND DUCT CRITERIA

1. ALL DUCTWORK SHALL BE SIZED USING A STANDARD DUCTULATOR. THE FOLLOWING CRITERIA SHALL BE USED TO CALCULATE DUCT SIZES:
   a. SUPPLY DUCTS SHALL BE NO MORE THAN 0.10 IN. PER 100 FEET OF PRESSURE DROP.
   b. RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF PRESSURE DROP.
   c. VENTILATION DUCTS SHALL BE NO MORE THAN 0.075 IN. PER 100 FEET OF PRESSURE DROP.
2. CONDENSATE SHALL BE COLLECTED AND RUN WITH ADEQUATE PITCH TO THE CLOSEST SAFE-WASTE. PROVIDE CONDENSATE PUMPS IF PITCH CAN NOT BE ACHIEVED. CONDENSATE PIPING SHALL BE SIZED AS FOLLOWS:

CONDENSATE PIPE SIZING CHART

TONS	SIZE
0-20	3/4"
20-40	1"
40-90	1-1/4"
90-125	1-1/2"
125-250	2"

3. ALL CONDENSATE DRAINS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ELECTRICAL COORDINATION

1. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATIONS OF SUPPRESSION SYSTEM PIPING WITH THE ELECTRICAL CONTRACTOR. DUCTWORK SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
2. COORDINATION OF DUCTWORK LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. APPROVAL OF SHEET METAL SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
3. PER NFPA 70, ARTICLE 110.26(F); DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.

MECHANICAL SPECIFICATIONS

GENERAL WORK:

1. The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
3. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
4. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
5. Mechanical work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
6. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
7. The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
8. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
9. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
10. The entire installation shall conform with the 2021 International Mechanical Code, and all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
11. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
12. The HVAC and Plumbing trades shall coordinate with the General Contractor, locate all required cutting and patching of existing work required by the installation of their trades work, and arrange for his compensation.
13. All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
14. Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments., component service, and provide a minimum 2" clearance between all piping and other work.
15. Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
16. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.
17. The Mechanical and Plumbing trades shall coordinate all electrical loads with the Electrical Contractor.
18. The architectural general conditions shall apply to and form a part of this section of these specifications.
19. The contractor shall perform all demolition work as indicated on the drawings as required to perform the work.
20. The contractor shall verify all utility service information shown on the drawings with the local utility company prior to submitting a bid. Any changes or service charges imposed by the utility company shall be qualified and included in the bid.
21. All equipment, materials and workmanship shall be guaranteed for a minimum of one year (five year for all compressors) from the date of acceptance by the owner.
22. Where products are specified by brand name, catalog numbers or by names of manufacturers, the reference is intended to be descriptive and not restrictive and is solely for the purpose of indicating the type of quality of the item that will be acceptable. An approved equal will be accepted unless otherwise indicated.
23. All cutting and patching of every nature required in connection with this contract shall be done by this contractor with mechanics experienced in their respective trades. All patching shall match adjacent surfaces.
24. All HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with the National Electric Code Sections 110.24, 430.8(Item 440.10, 700.5 and all applicable local codes. Coordinate exact available fault current and labeling with the Electrical Contractor. The Electrical Contractor shall provide all fault current labels.
25. Contractor shall perform all system commissioning with an approved commissioning agency per Section C408 if the 2021 International Energy Conservation Code (if required).

HVAC NOTES:

1. Provide all specialties, accessories, controls, and the like to provide a complete, quiet, properly operating automatically controlled systems.
2. Do not operate the air conditioning systems during construction except for testing, and provide new filters for all units and immediately prior to substantial completion.
3. Ductwork shall be constructed of galvanized sheet metal fabricated and erected in accordance with ASHRAE and SMACNA standards. Provide turning vanes in all elbows, manual volume dampers in all branches, air equalizers, and similar devices as required to properly balance the systems and produce quiet, draftless operation. Ductwork sizes shown on the plans are sheet metal I.D. free area.
4. Ductwork shall be constructed to the sizes shown and made airtight during erection with caulked, taped or hardcast joints to restrict leakage to 5% or less of circulated air.
5. All ductwork shall be closely coordinated prior to fabrication. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information. Full sheet metal shop drawings drawings shall be developed with all spacial requirements worked out and shown on drawings. These drawing must show: locations of openings to be cut through existing construction and any problems. These drawing shall be submitted for review by the architect and engineer prior to fabrication.
6. Provide UL labeled and inspected fire dampers for all ducts and openings passing through floors, fire rated walls and ceilings, where shown on the drawings, and in locations required by codes.
7. Provide starters for all motor driven equipment, supports, hangers, flexible duct connections, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. Retain the General Contractor to provide all cutting and patching required by the HVAC trade.
8. Prior to ordering materials and equipment, submit product data sheets for all items for review by the Engineer.
9. Balance all air quantities to within 5% of the CFM shown on the drawings. Finally balance individual outlets to the occupants' satisfaction. Install all devices required for balancing in the system during construction. Provide certified balancing reports for review by the Engineer.
10. Provide a complete, automatic, ready-to-use system, unconditionally guaranteed in writing against defective workmanship and materials for a period of one year from the date of beneficial occupancy.
11. All flexible ductwork shall conform with the UL rating under flexible air duct test UL-181.

EQUIPMENT:

1. Ductwork
   1.1 Ductwork shall be galvanized steel designed for two inch W.C. pressures for supply and return systems and one inch W.C. for exhaust systems in accordance with SMACNA. All elbows shall be provided with single thickness turning vanes. All supply and return ductwork shall be insulated with 1-1/2" fiberglass duct wrap as manufactured by Owens Corning with a minimum installed R-value of five (5) in unconditioned spaces and R-value of eight (8) outside the building.
   1.1.1 Insulate all sheetmetal supply and return ducts.
   1.1.2 Provide acoustical lining at the first ten feet of the supply and return ductwork of the rooftop unit.
   1.2 Flexible ductwork shall be UL 181 Class 1 complete with an insulating fiberglass blanket, foil faced vapor barrier and designed to withstand pressures up to six inches positive pressure W.G. flexible duct runs shall be a maximm of 6 feet in length and shall be type 5M-insulated as manufactured byFlexmaster USA, INC. with a minimum R-value of six (6)
2. Fans
   2.1 Centrifugal cabinet fans shall have centrifugal steel wheels, galvanized steel fan casing with intergral backdraft damper, disconnect switch mounted and wired and perforated metal face grille with extruded aluminum frame where scheduled. Fans shall carry the UL label and be rated in accordance with the AMCA test code. Fans shall be provided with a unit mounted speed controller. Capacities shall be as indicated on the drawings. Fans shall be as manufactured by Loren Cook Company., Inc. with model numbers as scheduled.
   2.2 Diffusers, Registers and Grilles
   2.3 Ceiling diffusers shall be complete with balancing dampers and white enamel finish.
   2.4 Ceiling return air registers shall be complete with balancing dampers and white enamel finish.
3. Controls
   3.1 The contractor shall provide and install all necessary control components included, but not limited to, relays, automatic dampers, damper operators, thermostats, controllers, etc. and wiring as required to provide automatic temperature control. All control components shall be as manufactured by Honeywell or equal. All wiring shall be done in accordance with the local and state codes and the national electric code.
   3.1.1 Thermostats for HVAC units shall be Honeywell T7350 series with seven-day programming for night setback. Thermostat shall be mounted in accordance with ADA requirements.
   3.1.2.1 Occupied mode: supply fan shall run continuously, the outside air damper shall be open to the minimum position and the heating and cooling portions of the unit shall function as required to maintain space conditions.
   3.1.2.1 Unoccupied mode: the outside air damper shall be closed and the fan shall cycle with heating/cooling portions of the unit.
   3.1.3 All exhaust fans shall be connected to Timeclock furnished by the Electrical Contractor unless otherwise indicated.
4. The equipment and materials shall be completely cleaned prior to testing, insulating and placing the system in operation.
5. The refrigeration system shall be tested and proven tight prior to placing in operation. Units shall be checked for proper refrigerant charge and operation and adjusted as per the manufacturer's recommendations.
6. The complete supply, return and exhaust air duct systems, including fans, dampers, outlets, and appurtenances shall be properly balanced to deliver air volumes within +/- 5 percent of the values indicated. The total system leakage through duct joints and connections shall not exceed five percent. Temperature, ampere and RPM readings shall also be provided to verify system performance.
7. The contractor shall furnish three sets of instruction manuals to the owner at the completion of construction.

No.	DATE	DESCRIPTION	REV'D BY
1	022726	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:

VINELAND MUNICIPAL ELECTRIC UTILITY
BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKeman Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 300
Trevose, PA 19053
O. (215) 322-7711
F. (215) 322-7729
www.holsteinwhite.com

TITLE: MECHANICAL SCHEDULES & DETAILS

SEAL:

SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

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SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.: BA
DRAWN BY: RY
CHKD.BY: SW

DRAWING NO:
M-2.0

DOAS/RTU FAN SCHEDULE - 10Bb476189

FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	TOTAL AIR CFM	MIN OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT +LBS+	ESP	ELECTRICAL INFORMATION: HP	PHASE	VOLT	MCA	MOCP	COOLING INFORMATION: OUTSIDE AIR	MIXED AIR	LEAVING AIR	CAPACITY: TOTAL	SENS.	ICOP	DEHUMIDIFICATION: EWT	DESIRED	MAX	MOISTURE REMOVAL RATE	REHEAT INFORMATION: CAPACITY	GAS TYPE	GAS HEAT INFORMATION: INPUT BTUH	OUTPUT BTUH	TEMP RISE	REQUIRED INPUT GAS PRESSURE	ADL MINIMUM ROOM VOLUME: ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)	NOTES
1	ERV	1	CAS-HVAC1-100-15-5T-ERV	CAPTIVEAIRE	ISP-1	1150	1150	0	1602	1.000	1.00	3	208	35A	40A	95.0°F	78.0°F	79.3°F	66.4°F	51.0°F	51.0°F	51.0°F	51.0°F	51.0°F	6.4	70.0°F	58.8°F	64.6 MBH	53 MBH	49.9	LBS/HR	NATURAL	96,730	78051	55°F	7 IN. W.C. - 14 IN. W.C.	1982	357	7.2	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21

NOTES:
1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. R-410A REFRIGERANT. R-454B OR R-32 REFRIGERANT NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. HOT GAS REHEAT COIL
6. ELECTRONIC EXPANSION VALVE - TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. COMPRESSOR MANUFACTURER'S 5 YEAR PARTS WARRANTY. 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS -DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT-
10. TOTAL ENERGY RECOVERY WHEEL WITH SPEED CONTROLS FOR FROST PROTECTION AND MODULATION TO CAPACITY. INCLUDES SUPPLY AND EXHAUST FILTER & WHEEL MONITORING
11. ELECTRONIC COMMUNICATING EC PLUG FANS WITH VARIABLE SPEED CONTROL. INCLUDES SUPPLY AND EXHAUST FANS WITH DIGITAL FANS USING MAC 6.0 TURNDOWN WITH MV AND 3:1 TURNDOWN WITH LP
12. ELECTRONIC MONITORING INTERNAL TO UNIT WITH ETH MODBUS/BACNET/IP INCLUDED THROUGH DIGITAL INTERFACE
13. FILTERS SUPPLY AND EXHAUST AIR STREAMS WITHIN ENERGY RECOVERY VENTILATOR MODULE
14. DUCT MOUNTED SMOKE DETECTORS, TO UNIT WITH DTH MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
15. DUCT MODULATING DAMPER REHEAT
16. 0°F LOW AMBIENT OPERATION
17. BAROMETRIC RELIEF DAMPER
18. 1" EXTERIOR DUAL-WALL CONSTRUCTION w/ R-4.3 INSULATION-MINIMUM 24GA EXTERIOR w/ 18GA BASE
19. 2" MERV 13 FILTERS FOR ERV
20. MINIMUM ROOM AREA ASSUMES 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER
21. SCCR RATING OF 10kAMP

FOR QUESTIONS, CALL THE
Eastern PA Mechanical
Rep
PHONE: (267) 304 - 4126
EMAIL: rep108@captivesire.com

DOAS/RTU ENERGY RECOVERY SCHEDULE

FAN UNIT NO	TAG	EXHAUST AIR FAN DESIGN: CFM	ESP	MOTOR HP	V/Ø/HZ	SUPPLY AIR SUMMER: ENTERING AIR 80-WB TEMP(°F)	LEAVING AIR 58-WB TEMP(°F)	RETURN AIR 78-WB TEMP(°F)	DESIGN RECOVERED SUMMER CAPACITY: TOTAL	SENSIBLE	LATENT	SUPPLY AIR WINTER: ENTERING AIR 58-WB TEMP(°F)	LEAVING AIR 58-WB TEMP(°F)	RETURN AIR 78-WB TEMP(°F)	DESIGN RECOVERED WINTER CAPACITY: TOTAL	SENSIBLE	LATENT
1	ERV	1275	0.5	2.5	208/3/60	95.0/78.0	79.3/66.4	75.0/62.0	59.9 MBH	38.6 MBH	30.3 MBH	11.0/8.6	55.8/46.4	69.0/55.0	77.9 MBH	55.9 MBH	22.0 MBH

CURB ASSEMBLIES

NO	QTY	TAG	R-VALUE	WEIGHT	ITEM	SIZE
1	1	ERV	4.3	105 LBS	CURB	41.000"W X 111.000"L X 14.000"H INSULATED

2" #4.3 FOIL FACED FIBERGLASS INSULATION COMPLIES WITH UL/CAN/ULC-S 4 & ASHRAE STANDARDS

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	TOTAL CFM MONITORING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	COOLING OVERRIDE
		1	RTU BLOWER DOOR SWITCH
		1	BLOWER STOP DELAY ALLOWS RESIDUAL HEAT TO BE TRANSFERRED INTO THE SUPPLY AIR AFTER HEATING HAS STOPPED. FACTORY SET AT 90 SECS FOR 18". 30 SECS FOR 24"
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED IF A NON-3CV COMPRESSOR IS SELECTED. 1500VA TRANSFORMER USED IF 3CV COMPRESSOR OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREVIEW
		1	CONSTRUCTION MODE - MODIFIES START-UP SETTINGS TO ALLOW TEMPERING A BUILDING STILL UNDER CONSTRUCTION
		1	OVERHEAT STAT
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	RTUS 30WN DISCHARGE
		1	RTU INTAKE/RETURN DAMPER - MANUAL CONTROL, VIA HMI
		1	RTUS 30WN RETURN
		1	2" METAL MESH FILTERS FOR RTUS OUTDOOR INTAKE
		1	RTUS ECONOMIZER BAROMETRIC RELIEF
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	OCCUPIED SCHEDULING
		1	CLOGGED FILTER SWITCH - NOTIFICATION IN HMI
		1	RTUS CONVENIENCE OUTLET (GFCI), 13 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND 2 BOX
		1	5 TON MODULATING COOLING OPTION, 208/230V, R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, 3% ESM CONDENSING FAN
		1	LOV AMBIENT COOLING OPERATION - DOWN TO 0° AMBIENT
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	5 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL - R454B
		1	ENERGY RECOVERY VENTILATOR FOR 208/230V RTUS
		1	2" MERV 13 SUPPLY FILTERS FOR ERV1
		1	4" MERV 13 RETURN FILTERS FOR ERV1
		1	ERV EXHAUST FAN - MANUAL CONTROL VIA HMI
		1	COMMERCIAL SMOKE DETECTOR-ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
		1	RTUS CURB DUCT HANGER
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (57) VFD INCLUDED
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY. 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT. 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY - (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

HMI SCHEDULE			
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING
FAN #1	HMI #1 - UNIT	IN UNIT	NOT AVERAGED
FAN #1	HMI #2 - SPACE		AVERAGED

MODBUS ADDRESS
55
56

REVISIONS

DESCRIPTION	DATE
A	
A	
A	
A	

CAPTIVEAIRE

Eastern PA Mechanical
Rep
229 E City Line Avenue, Suite #103, Bala Cynwyd, PA, 19004 PHONE: (267) 304 - 4126 EMAIL: rep108@captivesire.com
www.captivesire.com

Vineland City Electric Office/Warehouse Bldg - ERV
VINELAND, NJ. 08360

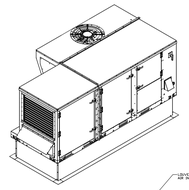
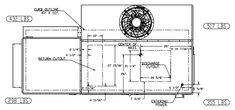
DATE: 1/28/2026
DWG.#: 8476189
DRAWN BY: JC-108
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 1

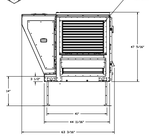
FAN #1 CAS-HVAC1-100-15-5T-ERV - HEATER (ERV)

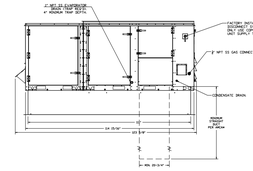
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. (_____) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM SERVICE BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.

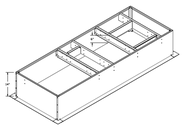
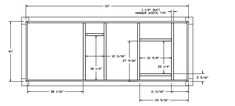
*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN SMCA PUBLICATION 202 WHEN USING RECTANGULAR DUCTWORK. ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED SUPPLY STRAIGHT DUCT SIZE IS 20-3/4" x 21-1/4".
SUGGESTED RETURN STRAIGHT DUCT SIZE IS 28" x 30".





REVISIONS

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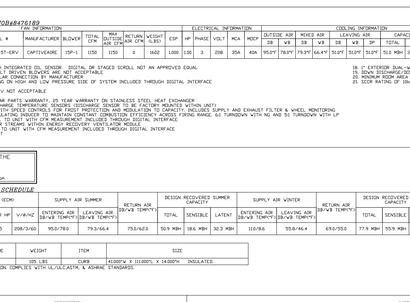
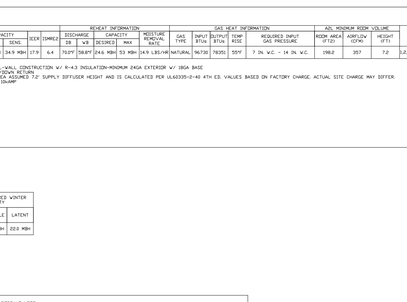
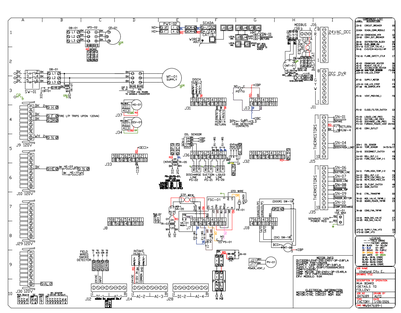
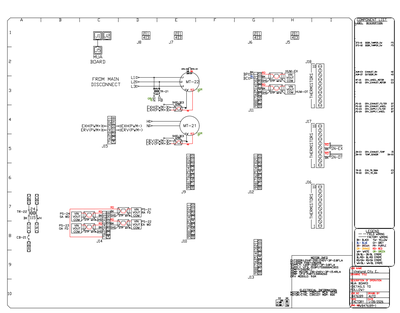
CAPTIVEAIRE

Eastern PA Mechanical
Rep
229 E City Line Avenue, Suite #103, Bala Cynwyd, PA, 19004 PHONE: (267) 304 - 4126 EMAIL: rep108@captivesire.com
www.captivesire.com

Vineland City Electric Office/Warehouse Bldg - ERV
VINELAND, NJ. 08360

DATE: 1/28/2026
DWG.#: 8476189
DRAWN BY: JC-108
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 2

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www.captivesire.com

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VINELAND, NJ. 08360

DATE: 1/28/2026
DWG.#: 8476189
DRAWN BY: JC-108
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 3

SEQUENCE OF OPERATIONS - Dedicated Outdoor Air System (DOAS) with Energy Recovery

General

The DOAS unit shall provide 100% outdoor air ventilation with energy recovery and shall operate under occupancy scheduling. Unit includes CASLink cloud-based building automation system for remote monitoring and setpoint control.

Modes of Operation

Occupied Mode

When the unit is enabled by schedule:

1. Outdoor Air and Exhaust Dampers
   - Outdoor air damper shall open to maintain required ventilation airflow
   - Exhaust airflow shall track supply airflow to maintain energy recovery balance
2. Supply and Exhaust Fans
   - Supply fan shall start run at constant air volume
   - Exhaust fan shall start and run at constant air volume
3. Energy Recovery Operation
   - Energy recovery wheel shall be enabled during occupied mode
   - Enthalpy wheel shall modulate to precondition outdoor air toward discharge air temperature setpoint, unless inhibited by economizer logic
   - Energy recovery shall operate in both heating and cooling seasons
4. Discharge Air Temperature Control
   - Heating (gas) and cooling (DX) components shall modulate as required after energy recovery contribution to maintain discharge air temperature setpoint
5. Humidity / Dehumidification Control
   - Onboard controller shall reference intake, discharge, and/or space humidity sensors as applicable and modulate compressor and hot gas reheat valve to maintain discharge humidity setpoint

Unoccupied Mode

When the unit is disabled by schedule and no override is active:

- Supply and exhaust fans shall stop
- Outdoor and exhaust air dampers shall close
- Energy recovery wheel shall stop
- Heating, cooling, and dehumidification shall be disabled
- Safeties shall remain active

No.	DATE	DESCRIPTION	REV'D BY
1.	022726	ISSUED FOR BID	

REVISIONS

APPROVAL

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE: MECHANICAL SCHEDULES & DETAILS

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 300
Trevose, PA 19053
O: (215) 322-7777
F: (215) 322-7799
www.holsteinwhite.com

SEAL:
SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

OWNER/GC MUST BE VERIFIED BY ELECTRICAL ENGINEER OR ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.
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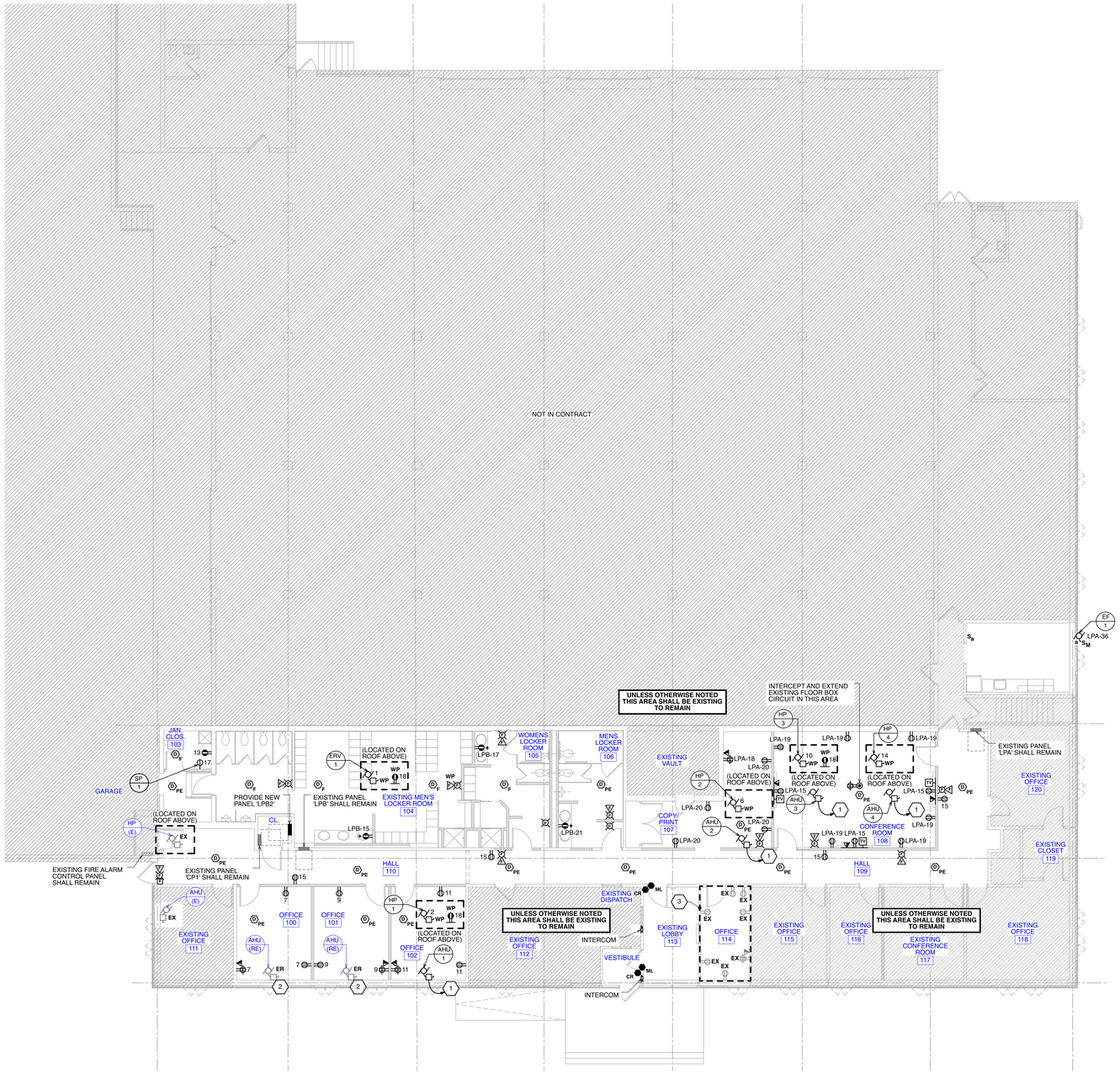
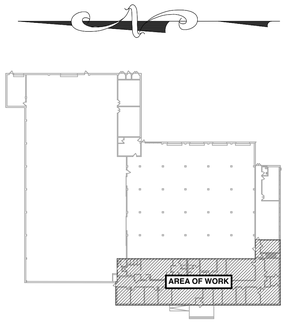
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.:
DRAWN BY: RY
CHKD BY: BW

DRAWING NO: M-2.1



1 PARTIAL GROUND FLOOR POWER PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

NOT TO SCALE

DRAWING NOTES

1. FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR AND WIRE DISCONNECT SWITCHES FURNISHED BY MECHANICAL CONTRACTOR.
3. MOTORIZED DAMPERS: REFER TO MECHANICAL PLANS FOR EXACT LOCATION.INTERCONNECT TO LOCAL AHU AS DIRECTED BY M.C.
4. UNLESS OTHERWISE NOTED, ALL POWER SHALL BE CIRCUITED TO PANEL 'LPBS'.
5. COORDINATE ALL LOW VOLTAGE WORK WITH OWNER AND OWNERS LOW VOLTAGE VENDOR. ELECTRICAL CONTRACTORS SHALL FURNISH AND INSTALL ALL BACK BOXES WITH CONDUIT AND PULL STRING TO ACCESSIBLE CEILING SPACE.
6. UNLESS OTHERWISE NOTED, ALL FIRE ALARM DEVICES SHALL BE EXISTING TO REMAIN.

DEMOLITION NOTES

1. WHERE EXISTING FACILITIES ARE BEING ALTERED, DISCONNECT AND REMOVE OR RELOCATE ALL EXISTING ELECTRICAL WORK THAT INTERFERES WITH OR IS NECESSARY BECAUSE OF NEW CONSTRUCTION AS SPECIFIES, SHOWN OR REQUIRED.
2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH A MINIMUM INTERRUPTION IN THE OPERATION OF THESE SYSTEMS. OBTAIN WRITTEN CLEARANCE FROM OWNER FOR SUCH INTERRUPTIONS AND SCHEDULE SAME AT WHATEVER TIME SPECIFIED IN WRITING BY OWNER.
3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT.
5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
6. DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
7. PERFORM ALL WORK NECESSARY TO PERMIT OPERATION OF ALL EXISTING SYSTEMS DURING THE CONSTRUCTION PERIOD. PROVIDE AND MAINTAIN APPLICABLE APPROVED TEMPORARY WIRING TO MEET THIS REQUIREMENT.
8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
9. ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNERS ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

KEY NOTES

1. INTERCONNECT TO LOCAL HEAT PUMP FOR POWER AND COMMUNICATION AS DIRECTED BY MECHANICAL CONTRACTOR.
2. INTERCEPT AND EXTEND EXISTING LOCAL BRANCH CIRCUITS TO NEW AHU LOCATION. PROVIDE ALL CONDUCTORS, JUNCTION BOXES, ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
3. PROVIDE NEW COVER PLATES ON ALL EXISTING WIRING DEVICES. COORDINATE EXACT FINISH WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.

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1	022726	ISSUED FOR BID	

REVISIONS

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PROJECT

VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS

415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 310
Trevose, PA 19053
O: (215) 322-7710
F: (215) 322-7711
www.holsteinwhite.com

JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR POWER PLAN

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

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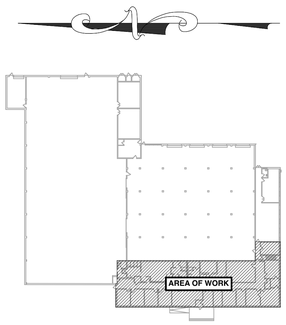
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.: RG
DRAWN BY: EP
CHKD.BY: JH

DRAWING NO: E-1.0

1 PARTIAL GROUND FLOOR LIGHTING PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

NOT TO SCALE

DRAWING NOTES

1. FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
2. FIELD VERIFY EXACT LOCATIONS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
3. UNLESS OTHERWISE NOTED ALL LIGHTING SHALL INTERCEPTED AND EXTEND TO EXISTING LIGHTING BRANCH CIRCUIT.
4. EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE OF LOCAL LIGHTING CONTROL.
5. UNLESS OTHERWISE NOTED ALL EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE EXISTING TO REMAIN.

DEMOLITION NOTES

1. WHERE EXISTING FACILITIES ARE BEING ALTERED, DISCONNECT AND REMOVE OR RELOCATE ALL EXISTING ELECTRICAL WORK THAT INTERFERES WITH OR IS NECESSARY BECAUSE OF NEW CONSTRUCTION AS SPECIFIES, SHOWN OR REQUIRED.
2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH A MINIMUM INTERRUPTION IN THE OPERATION OF THESE SYSTEMS. OBTAIN WRITTEN CLEARANCE FROM OWNER FOR SUCH INTERRUPTIONS AND SCHEDULE SAME AT WHATEVER TIME SPECIFIED IN WRITING BY OWNER.
3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT.
5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
6. DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
7. PERFORM ALL WORK NECESSARY TO PERMIT OPERATION OF ALL EXISTING SYSTEMS DURING THE CONSTRUCTION PERIOD. PROVIDE AND MAINTAIN APPLICABLE APPROVED TEMPORARY WIRING TO MEET THIS REQUIREMENT.
8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
9. ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNERS ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

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3600 Horizon Blvd., Suite 310
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O: (215) 322-7717
F: (215) 322-7719
www.holsteinwhite.com

SEAL:
JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR LIGHTING PLAN

DRAWING NO: E-1.1

SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D.:
DRAWN BY: RG
CHK'D BY: EP
JH

CHECK DIMENSIONS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

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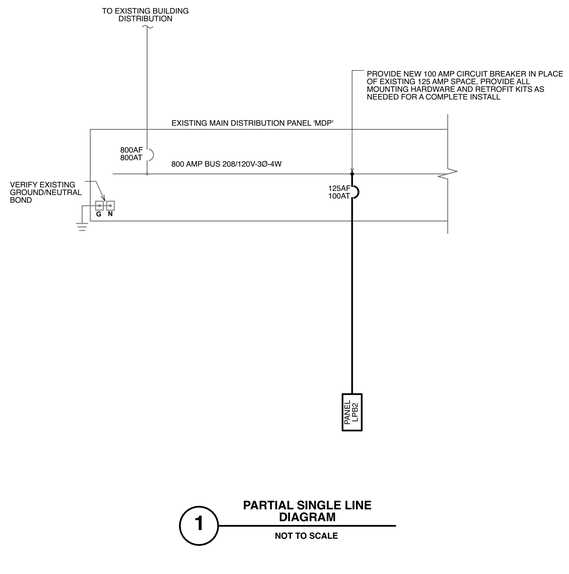
SINGLE LINE DIAGRAM NOTES

1. UNLESS OTHERWISE NOTED, ALL DEVICES AND SPACES ARE 3 POLE.
2. UNLESS OTHERWISE NOTED, ALL ABOVE GRADE CONDUCTORS SHALL BE COPPER, TYPE THW, RATED 75°C.
3. UNLESS OTHERWISE NOTED ALL BELOW GRADE CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, RATED 75°C.
4. UNLESS OTHERWISE NOTED, ALL INTERIOR CONDUITS SHALL BE EMT.
5. UNLESS OTHERWISE NOTED ALL UNDERGROUND AND EXTERIOR CONDUITS SHALL BE SCHEDULE 40 PVC.
6. LIGHT LINEWEIGHT INDICATES EXISTING EQUIPMENT.
7. HEAVY LINEWEIGHT INDICATES NEW EQUIPMENT.
8. ALL EQUIPMENT SHALL BE SERIES RATED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.
9. CONTRACTOR SHALL PROVIDE PERMANENT LABELS ON ALL ELECTRICAL AND HVAC EQUIPMENT INDICATING THE MAXIMUM AVAILABLE FAULT CURRENT.



1 PARTIAL SINGLE LINE DIAGRAM

NOT TO SCALE

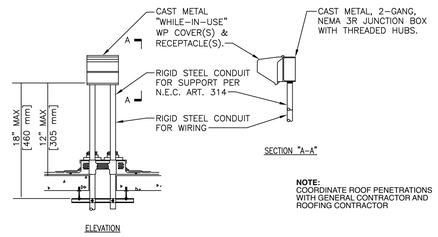
ELECTRICAL STANDARD MOUNTING HEIGHTS

9" Below Finished Ceiling	Wall-Mounted Clocks, Program Bells, Fire Alarm Gongs and Horns
10'-0"	Battery Lighting Units and Remote Wall Mounted Lighting Heads (Or 1'-0" Below Finished Ceiling)
8'-6"	Pendant Hung Industrial and Strip Lighting Fixtures
Center Above Door or Window Opening	Warning and Signaling Fixtures/Signs
6'-8" or 6" Below Finished Ceiling	Fire Alarm Illuminated Flashing Lights (Lowest of the two Heights). **Mounting Height to the Bottom of Device.**
6'-8"	Top of Back-Mounted Wall Exit Signs (Not Mounted Above Doors)
6'-6"	Top of Flush and Surface Mounted Electrical Panelboards and Communication System Cabinets
6'-0"	Top of Highest Electrical Safety Disconnect Switches, Magnetic Motor Starters and Contactors
4'-6"	Wall Mounted Telephones and Pay Stations (3'-6" at Handicap Locations)
4'-0"	Top of Highest Circuit Breaker in Accessible Load Centers
3'-6"	Fire Alarm Pull Stations
3'-4"	Wall Mounted Electrical Device Lighting Switches
2'-0"	Electrical Receptacles in Mechanical Spaces, Electrical and Elevator Rooms
1'-6"	Electrical Receptacles, Television Outlets, Telephone Outlets, and Computer Outlets
0'-0"	Finished Floor

Mounting Heights to center of outlets unless otherwise noted. In masonry construction the mounting heights shall be used for reference to the nearest block or brick coursing.
The above mounting heights shall be adhered to unless specifically noted or detailed on the Architectural drawings or specifications.

ELECTRICAL SYMBOLS

AF	**Amp Frame**		
AT	**Amp Trip**		**LED Lighting Fixture**
ER	**Existing Relocated**		
EX	**Existing to Remain**	EM	**Emergency Battery Pack**
WP	**Weatherproof**		**Dual Remote Lighting Heads**
+	**Device Mounted Above Counter Top**	S_{LD}	**Low Voltage Dimmer Switch**
- - UE - -	**Underground Conduit or Ductbank [Indicates Type of Service] UE - Underground Electric UC - Underground Commun.**	S_L	**Low Voltage Switch**
	Communication System Outlet	M	**Wall Mounted Occupancy Sensor**
TV	**Television Outlet**	D M	**Wall Mounted Dimming Occupancy Sensor**
	Duplex Receptacle - 125V, 2P, 3W	CLG	**Ceiling Mounted Occupancy Sensor**
	GFI Duplex Receptacle - 125V, 2P, 3W		**Motor**
	Quadraplex Receptacle - 125V, 2P, 3W		**Unfused Disconnect Switch**
	Floor Outlet	M	**Utility Company Meter**
	Floor Outlet with Device Indicated		**Current Transformer**
F	**Fire Alarm Manual Pull Station**		**Circuit Breaker**
	Fire Alarm Horn		**Emergency Generator**
	Fire Alarm Flashing Light	E N	**Automatic Transfer Switch**
D F PE	**Automatic Detector [Detector Control Function] F - Thermal, Fixed Temperature PE - Smoke PhotoElectric**		**Transformer**
CR ML	**Alarm Initiating Contact [Alarm Control Function] CR - Card Reader ML - Magnetic Lock**		**Ground Rod**



2 ROOF MOUNTED RECEPTACLE DETAIL

NOT TO SCALE

GENERAL NOTES

1. Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
3. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
4. Electrical equipment shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
5. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
6. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
7. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.
8. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
9. The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the codes of the National Fire Protective Association, the New Jersey Uniform Construction Codes, and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
10. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
11. Before starting any work under this Contract, file for inspection with the Middle Department Inspection Agency or other certified Agency. Upon completion of the work, furnish Electrical Certificates from said Agency for all Electrical equipment and systems installed or furnished and installed as part of the work.
12. The contractor shall at all times keep the premises free from the accumulation of waste materials or rubbish caused by his employees or work. At the completion of the work, he shall remove all superfluous materials, equipment and debris resulting from the work.
13. All feeder wiring shall be soft drawn copper of 98% conductivity, installed in code conforming metallic raceways or cable assemblies. All wiring shall be copper, thermoplastic covered insulated Type 75° C. THW or 90° C. Type THHN, 600-volt rating. Wire No. 8 AWG and smaller shall be solid. Wire larger than No. 8 shall be stranded.
14. All wiring shall be insulated copper conductors installed in code conforming raceways or cable assemblies.
15. All wiring shall be run concealed wherever possible. All exposed conduit shall be EMT or rigid steel as required. Flexible conduit shall be smooth liquidtight with appropriate fittings. Conduit drops from above ceiling shall be structurally secured and supported. Cable assemblies used for branch circuits shall not be run exposed. Cable assemblies shall be permitted exposed for final connections to Mechanical and Plumbing equipment and shall be limited to 6 feet total length, routing shall not interfere with equipment workspace.
16. Where conductors connect directly to equipment, the insulation temperature rating of the conductor shall meet or exceed the equipment temperature rating.
17. Color code conductors to designate neutral conductor and phases. Color coding shall conform with existing building standard.
18. Exercise great care in maintaining a uniform and consistent arrangement of phase conductors on all systems. Throughout the entire wiring systems, each phase conductor must always be in the same physical position with respect to the other phase wires at equipment terminals.
19. Grounding shall comply with Article 250 of NEC and to approval of local Underwriters inspection authorities.
20. Panelboards shall be dead front type with plated aluminum bus, bolt-on breakers, fully rated neutral bus and grounding bus block. Cabinet shall be code gauge galvanized steel, NEMA 1, minimum 20" wide, 5-3/4" deep. Cover shall have door and trim and adjustable clamps, gray baked finish, and tumbler type key lock. "Spaces" shall be fully bussed and drilled, ready for breaker installation.
21. Contractor shall provide typed updated panel schedules at completion of project for all panels effected by scope of work.
22. Circuit Breakers shall be molded case, bolted, thermal magnetic trip in each pole, enclosure-compensated to carry full rated load at 40°C., trip-free handles shall clearly indicate trip, on and off condition, quick-make and quick-break action. Lugs approved for copper and aluminum conductors and compression type. Ground Fault type breakers shall be provided with thermal and magnetic protection, UL Class A, 5 milliampere ground fault sensitivity, where required. Circuit breakers used as switches in 120 and 277 volt circuits feeding incandescent, fluorescent, and/or HID fixtures shall be approved for such use and marked "SWD", per NEC. Circuit breakers serving Heating and Air Conditioning equipment shall be HACR rated.
23. Where new circuit breakers are to be installed within existing panelboards, they shall be listed for use with the existing panelboard type, and of sufficient short circuit rating for the application.
24. Provide all labor, materials and equipment required to provide electric power to meet the requirements for heating, ventilating, air-conditioning and plumbing systems. Fully coordinate installation of electrical wiring and equipment with installation of electrically operated mechanical equipment provided by the Mechanical and Plumbing Contractors. Install disconnect switches, motor starters, and control transformers furnished by Mechanical and Plumbing Contractors. Provide final equipment electrical terminations. All internal equipment wiring shall be provided by others.
25. Test equipment, including panelboards and all other equipment and wiring for unintended grounds, short circuits, open circuits, continuity, current leakage, and that equipment will operate as specified. Test feeders for insulation resistance; for load balance of the final installation, and for overall operation of systems. Furnish labor and material required for making such tests and make corrections necessary to balance the load and to obtain proper operation.
26. Where existing facilities are being altered, disconnect and remove or relocate all existing electrical work that interferes with or is necessary because of new construction as specified, shown or required.
27. Perform alterations and additions to present electrical systems with a minimum interruption in the operation of these systems. Obtain written clearance from Owner for such interruptions and schedule same at whatever time specified in writing by Owner.
28. Lay out all work from approved building and property lines and benchmarks. Verify and be responsible for the correctness of all measurements in connection with work. Any change made in major overall dimensions as shown which affect the physical size, shape, or location of any part of the Work, whether due to field check or changes due to the use of equipment of a manufacturer other than that used as the basis of design shall not cause any interference with other work.
29. Electrical equipment shall not interfere in any way with other material or equipment and shall provide adequate working space; see Requirements for Electrical Installations, Article 110 and other related articles of the National Electrical Code.
30. Provide materials, equipment, supplies and labor necessary as required to adequately support, brace and strengthen all equipment and materials furnished as part of this work.
31. Locations are subject to changes that may be necessary to avoid obstacles in building construction. Verify all dimensions and conditions at site. Check layout for sizes and clearances, and provide so that the apparatus and material may be installed and operated satisfactorily in space provided. Install equipment and raceways to preserve headroom and to keep openings and passageways clear.
32. Protect all conduit, fittings, panelboards, and other equipment before and during installation and keep clean.
33. Identify each panel, panelboard, and other electrical equipment as to nature, service and purpose, by means of permanently attached, approved size, laminated phenolic nameplates.
34. Where sleeves containing a single conduit penetrate FIRE RATED walls, floors, partitions or slabs, fill and seal conduit to the sleeve with a 1-part intumescent caulk/putty sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTM E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves containing multiple conduits or multiple cables penetrate FIRE RATED walls, floors, partitions, or slabs, fill and seal spaces between the conduits or cables and the sleeve with 2-part intumescent foam sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTMA E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves penetrate exterior walls, fill and seal ends around conduits and/or cables with duct sealant compound equal to Solonte KN--1146, or Link Seal. Install seals in accordance with the manufacturer's recommendations to provide air tightness above ground and hydrostatic sealing below grade. Caulking or other type mastic is not acceptable. Where wiring devices are placed in fire rated construction, fire rating of installed assembly shall meet or exceed the rating of the construction.
35. Provide for each voice and data outlet a 4x4 outlet box with pullstring to accessible ceiling space. In non-fishable construction, provide 3/4" conduit with pullstring between outlet box and accessible ceiling space.
36. Coordinate all lighting fixture locations and quantities with Architectural plans, and provide all fixtures indicated.
37. 120 Volt Switches shall be quiet toggle type with totally enclosed case, rated 20 ampere, specification grade, color as selected by Architect.
38. Where dimmers are provided, install a separate neutral conductor for each branch circuit.
39. Dimmable switches shall be 120 volt switches rated for load controlled (i.e. incandescent, magnetic or electronic low voltage, fan speed, fluorescent, LED). Switch shall be dimmable thru the entire range from 0 to 100%, with preset control and separate on-off switch. Switches shall be as manufactured by Legrand. Provide Tru-Universal dimmer. Care shall be taken when de-rating switches for installation in multi-gang switch boxes. Install switches with highest loads on outside of boxes to minimize the quantity of cooling fins (sides) removed. Contractor shall be responsible to ensure quantity of sides removed does not de-rate switch below required capacity. Multiple switch boxes shall be provided as required to maintain ratings of switches. All switches shall be installed in accordance with manufacturers instructions.
40. Provide occupancy sensors where indicated on plan. Occupancy sensors shall be as manufactured by Watt Stopper. Wall type shall be dual technology, combination passive infrared and ultrasonic with toggle switch. Refer to detail for exact model number. Provide as built list of settings to owner in operations manuals.
41. Furnish and install all lighting fixtures as specified. Provide all interior and exterior lighting fixtures complete with sockets, reflectors, diffusers, shades, holders, lamps, ballasts, protective devices and all other required appurtenances. Prior to ordering lighting fixtures, verify exact type of ceiling to be used for each space. Coordinate with Division 15 to avoid conflicts between lighting fixtures and Mechanical and Plumbing piping, ductwork, supports, fittings and equipment. Furnish to other trades, plaster frames, trim rings, etc., where required.
42. Receptacles shall be permanently labelled to identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.
43. Standard duplex receptacles shall be polarized, duplex, parallel blade, U-grounding slot, specification grade, rated 20 amperes, 125 volts, style and color as selected by Architect.
44. GFI receptacles shall be 125V, 20 amp rated, as manufactured by Leviton or equal, style and color as selected by Architect. Trip threshold and time shall be as required for the application in accordance with the NEC.
45. Plates for Flush Devices shall be type and color as selected by Architect.
46. Unless otherwise noted, all floor devices shall be mounted in a floorbox. All floor boxes shall be the proper number of gangs to accommodate the indicated number of devices. Floor boxes shall be Wiremold omni-box series as manufactured by Legrand or approved equal. Provide cover plate flange required by floor type (typical for all floor boxes). All floor devices shall be recessed style and fully adjustable. Coordinate exact locations with architect prior to rough-in.
47. Contactors shall be permanent magnetic latched, electrically operated, mechanically-held type with number of poles and current rating as shown. Operating coils shall be 120 volts as required. Contactors shall be housed in NEMA Type 1 enclosures with knockouts and provisions for padlocking or incorporated in branch circuit or distribution panelboards as indicated. Provide hand-off-automatic switch in cover to facilitate safe maintenance. Contactors shall be UL listed for switching 208-volt ballast inductive loads. Install, completely wire and connect all systems in accordance with details on Drawings and manufacturer's instructions.
48. Motor and circuit disconnect means shall be a horsepower rated safety switch or a circuit breaker, each sized for the applied load and system voltage having an interrupting capacity not less than maximum available short-circuit current of circuit on which applied. Disconnects shall be sized in accordance with NEC and NEMA requirements. Safety switches shall be cartridge fuse type or unfused, as required. Manual toggle type motor switches with overload protection may be used as motor disconnects for fractional horsepower motors provided they meet NEC requirements including padlock provision. Safety switches shall be quick-make, quick-break and NEMA Heavy Duty, Type HD. Disconnect enclosures: NEMA 1, NEMA 3R, NEMA 4 to suit application.
49. Contractor shall include in bid Unit Prices for each of the following:
    A. Each type of receptacle, including coverplate connected to area circuit.
    B. Voice outlet box with conduit and pullstring.
    C. Each type of switch, including coverplate connected to area circuit.
    D. 20/1 Homerun to Local Branch Circuit Panel.
50. Unless otherwise noted all electrical equipment is a basis of design of Square D. Equipment shall be as manufactured by Square D or approved equal.
51. All electrical equipment shall be labeled to warn qualified persons of potential Arc Flash hazards in accordance with NEC Article 110.16 and all local codes. Electrical contractor shall provide all required labels.
52. All electrical equipment and HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with NEC Articles 110.24, 430.98, 430.99, 440.10, 700.5, and all local codes. The electrical contractor shall coordinate with the utility company to verify actual available fault current. Max values shown on the single line diagram are based on worst case conditions, actual conditions may vary.
53. No product shall be installed without prior approval from Owner.
54. Contractor shall perform all system commissioning with an approved agency per Section 9 of the 90.1 ASHRAE 2019.
55. Where specified or required, extend existing systems or tie into same to provide a complete coordinated electrical system to satisfaction of Owner and Architect.
56. All existing work to remain, but disturbed or disconnected because of alterations and new construction shall be replaced and put in operating condition unless instructed otherwise in writing by Owner or Architect.
57. Perform all work necessary to permit operation of all existing systems during the construction period. Provide and maintain applicable approved temporary wiring to meet this requirement.
58. Existing branch circuits not shown shall remain intact to extent practicable, and shall be extended as required.
59. Demolish and remove existing electrical equipment, feeders and conduit no longer required by new construction.
60. Circuit breakers made spare due to demolition shall be set in off position and labeled 'SPARE'.
61. ACCESS CONTROL SYSTEM: Extend existing system. The system shall include, but not limited to, all components necessary for additional door intercom station(s), raceway, conductors, and accessories required for a complete and operational system to the satisfaction of the Owner, Architect, and Engineer. The installation shall include, but not be limited to, 120-volt power, raceway, backboxes, and conductors required to support the installation of the Owner furnished equipment. Electrical plans reflect the locations of equipment, but final locations shall be as directed by the Owner and Owner's Equipment Vendor. Electrician shall be responsible to coordinate final equipment locations, specifications, and installation requirements with Owner's Equipment Vendor prior to rough-in.
62. Extend the existing Base Building Fire Alarm System as indicated and required. The system shall include, but not limited to: alarm initiating and indicating peripheral devices, conduit, wire and accessories required to furnish a complete operational system. Provide expansion of existing panel as required to accommodate installation of new devices. The equipment and installation shall comply with the current provision of the National Fire Protection Association Standards, 70, 72, and all local codes. All equipment shall be UL listed. New Fire Alarm devices shall be type and style to match base building standards. New Flashing lights shall be ADA approved, candela as required by location. Contractor shall use Building fire alarm vendor / service provider for all system tie-ins, testing and programming. **Vendor Info.: INTERACTIVE SECURITY (856) 595-9265**
63. Unless otherwise directed by the Fire Code Official, minimum radio signal strength for Fire Department communications shall be maintained at a level determined by the International Fire Code, National Fire Protection Association Standards 1, 110, 1225 and all local codes. The General Contractor shall provide a survey once all the exterior is enclosed and all interior walls pertaining to the renovations are up to determine if the existing radio coverage meets the minimum radio signal strength. If minimum radio signal strength is not met, drawings shall be provided under a separate permit for the installation or modification of a bi-directional amplification system to meet the minimum radio signal strength.
64. FIRE ALARM SUBMITTAL REQUIREMENTS: In addition, the contractor shall prepare a Fire Alarm system submittal to fulfill the requirements of the local Fire Marshall. Submit (3) sets of Signed and Sealed plans prepared by a certified Fire Protection Engineer for Fire Marshall review. The submittal shall include the following: Scaled plans indicating Fire Alarm work, Project Name and Address, Square footage of affected space, Fire Alarm symbols list, Device matrix showing description and quantity of devices, Equipment Cut sheets, Wiring information including size, type, and all point to point wire runs, Fire Alarm Riser diagram including initiating and annunciating devices, Battery calculations indicating existing batteries are of adequate capacity and/or sizing of new batteries, and voltage drop calculations.

No.	DATE	DESCRIPTION	REV'D BY
		REVISIONS	
1	022726	ISSUED FOR BID	

APPROVAL:

PROJECT:

VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS

415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKeman Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 300
Trevose, PA 19053
O: (215) 322-7711
F: (215) 322-7729
www.holsteinwhite.com

SEAL:

JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA28143700

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR WITH THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH FABRICATION OR WORK. DO NOT SCALE DRAWING.

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TITLE
ELECTRICAL SCHEDULES & DETAILS

SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REVD.: RG
DRAWN BY: EP
CHKD.BY: JH

DRAWING NO:
E-2.0

LIGHTING FIXTURE SCHEDULE

Type	Manufacturer	Catalog No.	Lamps No.	Lamps Watts	Lamps Type	Volts	Mounting	Remarks
A1	Elite Lighting	HH6-LED-600L/800L/1000L-DIM10-MVOLT-27K/30K/35K/40K/50K-HH6-4501		10	LED 3500K	120	Recessed	6" LED downlight located in locker rooms. Provide fixture with 0-10V dimming. Field selectacle lumens shall be set to 800L and color temperture to 3500 kelvin. Coordinate exact fixture and finish with owner and architect prior to purchase.
A2	Elite Lighting	22-FPL-BL-LED-2000L/3000L/4000L-DIM10-MVOLT-35K/40K/50K-85		37	LED 3500K	120	Recessed	2x2 LED flatpanel located in offices, conference rooms and corridor. Provide fixture with 0-10V dimming. Field selectable lumens shall be set to 4000L and color temperature to 3500 kelvin. Coordinate exact fixture and finish with owner and architect prior to purchase.
E1	Evenlite	TEBL3W	2	3	LED	120/ 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/3W LED lighting heads, nickel-cadmium battery, white housing.
E2	Evenlite	TEBL5W	2	3	LED	120/ 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/3W LED lighting heads, nickel-cadmium battery, white housing. Provide remote capability to interconnection to fixture Type E3.
E3	Evenlite	PRWLED2-MV	2	1	LED	9.6VDC	Exterior Surface	Outdoor dual remote heads 9.6V/1W LED lighting head.
X1	Evenlite	TLX-EM-RU-W			LED	120	As Indicated	LED exit sign, red letters, number of faces and directional arrows as indicated on plan or required by installed location, intergral battery to provide 90 mintues of illumination.

Notes:

1. In addition to those indicated above, refer to Architectural drawings and provide all fixtures specified.
2. All fixtures shall be provided with lamping.
3. Confirm final fixture options and color selection with Architect prior to purchase.
4. Refer to specifications for detailed requirements for construction, handling, ballasts, lamps, etc.
5. Coordinate fixture location and mounting requirements with Architectural drawings and details.
6. Refer to Architectural reflected ceiling plans for ceiling types and conditions affecting mounting and installation of lighting fixtures.
7. Coordinate exact fixture color temperature with owner and architect prior to purchase.

EXISTING PANEL LPB — 200 A MLO — 24 POLE — 208/120V - 3Ø - 4W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA A	B	C	Load - KVA A	B	C	Description	Wire Size	Cir. Bkr.	Cir. No.
1	20/1	#12	*Existing Load*	-	-	-	-	-	-	*Switch 3 & 4 Engineering Lighting*	#12	20/1	2
3	20/1	#12	*Chief Engineer and Hall Entrance Light*		-	-	-	-	-	*Hallway Bathroom Lighting*	#12	20/1	4
5	20/1	#12	*Men's Shower Room*	-		-	-	-	-	*Men's Locker Room Lights*	#12	20/1	6
7	20/1	#12	*Hallway Lights*	-	-		-	-	-	*Emergency Lighting*	#12	20/1	8
9	20/1	#12	*Lobby Lights and Outside Receptacles*		-	-	-	-	-	*Safe and General Office Lighting*	#12	20/1	10
11	20/1	#12	*Lobby Lights and Outside Receptacles*	-		-	-	-	-	*Exit Lighting*	#12	20/1	12
13	20/1	#12	*Dispatchers Office Receptacle*	-	-		-	-	-	*Hallway Rec. by Dispatchers Office*	#12	20/1	14
15	20/1	#12	**Ex Mens Locker Room Receptacle**		**0.2**		-	-	-	*Existing Load*	#12	20/1	16
17	20/1	#12	**Womens Locker Room Receptacle**			**0.2**	-	-	-	*Switch 2 Engineering Lighting*	#12	20/1	18
19	20/1	#12	*Dispatchers Office Receptacle*	-			-	-	-	*Switch 1 Engineering Lighting*	#12	20/1	20
21	20/1	#12	**Mens Locker Room Receptacle**		**0.2**		-	-	-	*Board Heater in Dispatch Office*	#10	30/2	22
23	20/1	#12	*Receptacles on North Wall*			-	-	-	-	-	-	-	-
**	100/3	#1	**Panel "CP1" Subfeed**	-									**
**	-	-	-		-								**
**	-	-	-			-							**
Total				0.0	0.4	0.2	0.0	0.0	0.0				Total

Phase (KVA)		Load Summary by Type	
A	0.0	Connected Receptacles	KVA
B	0.4	Connected Lighting	KVA
C	0.2	Connected Motor	KVA
Total	0.5	Connected Heating	KVA
		Connected Air Conditioning	KVA
		Connected Kitchen	KVA
		Connected Miscellaneous	KVA
		Total 0.5	KVA

Grey Italic = Existing to remain — **Black Bold = New**

Options and Accessories - (X) Indicates Selection

- [ ] Feed Through Lugs
- [x] Subfeed Main Lugs
- [ ] Split Bus
- [ ] Contactor Controlled
- [ ] Top
- [ ] Bottom
- [ ] Recessed
- [x] Surface
- [ ] Double Panel
- [x] Ground Bus
- [ ] Insulated Ground Bus

EXISTING PANEL LPA — 200 A MLO — 36 POLE — 208/120V - 3Ø - 4W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA A	B	C	Load - KVA A	B	C	Description	Wire Size	Cir. Bkr.	Cir. No.
1	20/1	-	*General Office North*		-	-	-	-	-	*General Office Center*	-	20/1	2
3	20/1	-	*General Office South*		-	-	-	-	-	*Corridor #1 South*	-	20/1	4
5	20/1	-	*Conference Room*	-		-	-	-	-	*Superintendents Office*	-	20/1	6
7	20/1	-	*Drafting Room*	-	-		-	-	-	*Drafting Room*	-	20/1	8
9	20/1	-	*Engineers Office*		-	-	-	-	-	*Stairs & Store Room*	-	20/1	10
11	20/1	-	*Corridor's #2 & 3 & Meter Room North*			-	-	-	-	*Meter Room South*	-	20/1	12
13	20/1	-	*Lab, Test Room*	-			-	-	-	*Zerox 813 Copier*	-	20/1	14
15	20/1	#12	**Conference Room 108 TV Stations**		**1.5**		-	-	-	*Telephone Power*	-	20/1	16
17	20/1	-	*New LED Lamp Posts*			-	-	-	**1.0**	**Copier Room 107**	#12	20/1	18
19	20/1	#12	**Conference Room 108 Receptacles**	**1.1**			**0.7**			**Copy/Print 107 Receptacles**	#12	20/1	20
21	20/1	-	*Exit & Ltg*		-	-	-	-	-	*Copy Office Rec.*	-	20/1	22
23	20/1	-	*Door Exit Lights*		-	-	-	-	-	*Receptacles*	-	20/1	24
25	20/1	-	*Receptacles*	-	-	-	-	-	-	*Receptacles*	-	20/1	26
27	20/1	-	*Alarm Bell & Zerox*	-	-	-	-	-	-	*Receptacles*	-	20/1	28
29	20/1	-	*Receptacles*		-	-	-	-	-	*Underfloor Duct Recept.*	-	20/1	30
31	20/1	-	*Under Floor Duct Intercom.*	-	-		-	-	-	*Clock Receptacles*	-	20/1	32
33	30/1	-	*Spare (Off Position)*		-	-	-	-	-	*Elec. Heat. Supt. Office (Off Position)*	-	20/1	34
35	30/1	-	*Spare (Off Position)*			-			**0.1**	**EF-1**	#12	20/1	36
Total				1.1	1.5	0.0	0.7	0.0	1.1				Total

Phase (KVA)		Load Summary by Type	
A	1.8	Connected Receptacles	KVA
B	1.5	Connected Lighting	KVA
C	1.1	Connected Motor	KVA
Total	4.4	Connected Heating	KVA
		Connected Air Conditioning	KVA
		Connected Kitchen	KVA
		Connected Miscellaneous	KVA
		Total 4.4	KVA

Grey Italic = Existing to remain — **Black Bold = New**

Options and Accessories - (X) Indicates Selection

- [ ] Feed Through Lugs
- [ ] Subfeed Main Lugs
- [ ] Split Bus
- [ ] Contactor Controlled
- [ ] Top
- [ ] Bottom
- [x] Recessed
- [ ] Surface
- [ ] Double Panel
- [x] Ground Bus
- [ ] Insulated Ground Bus

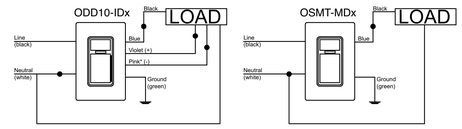
NEW PANEL LPB2 — 125 A MLO, 22 KAIC — 42 POLE — 208/120V - 3Ø - 4W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA A	B	C	Load - KVA A	B	C	Description	Wire Size	Cir. Bkr.	Cir. No.
1	20/3	#12	ERV	1.3			1.0			HP-1 & AHU-1	#12	15/2	2
-	-	-	-		1.3			1.0		-	-	-	-
-	-	-	-			1.3			1.0	HP-2 & AHU-2	#12	15/2	6
7	20/1	#12	Office 100	0.7			1.0			-	-	-	-
9	20/1	#12	Office 101		0.7			2.1		HP-3 & AHU-3	#10	30/2	10
11	20/1	#12	Office 102			0.7			2.1	-	-	-	-
13	20/1	#12	Janitor Closet Receptacle	0.2			2.1			HP-4 & AHU-4	#10	30/2	14
15	20/1	#12	Corridor Receptacles		0.7			2.1		-	-	-	-
17	20/1	#12	SP-1			0.5			0.5	Rooftop Receptacles	#12	20/1	18
19	20/1	#12	Spare							Spare		20/1	20
21	20/1	#12	Spare							Spare		20/1	22
23	20/1	#12	Spare							Spare		20/1	24
25			Space							Space			26
27			Space							Space			28
29			Space							Space			30
31			Space							Space			32
33			Space							Space			34
35			Space							Space			36
37			Space							Space			38
39			Space							Space			40
41			Space							Space			42
Total				2.2	2.8	2.6	4.1	5.2	3.6				Total

Phase (KVA)		Load Summary by Type	
A	6.3	Connected Receptacles	KVA
B	7.9	Connected Lighting	KVA
C	6.2	Connected Motor	KVA
Total	20.4	Connected Heating	KVA
		Connected Air Conditioning	KVA
		Connected Kitchen	KVA
		Connected Miscellaneous	KVA
		Total 20.4	KVA

Options and Accessories - (X) Indicates Selection

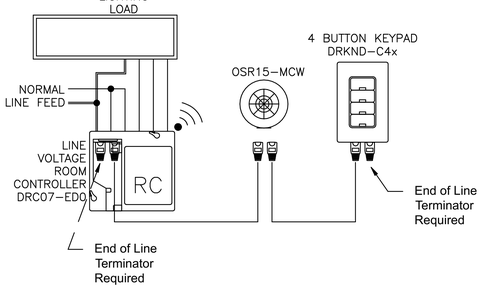
- [ ] Feed Through Lugs
- [x] Subfeed Main Lugs
- [ ] Split Bus
- [ ] Contactor Controlled
- [ ] Top
- [ ] Bottom
- [x] Recessed
- [ ] Surface
- [ ] Double Panel
- [x] Ground Bus
- [ ] Insulated Ground Bus



NOTES:

1. SENSORS SHALL BE VACANCY TYPE CONFIGURATION, MANUAL ON, AUTOMATIC OFF.
2. WALL SENSORS SHALL HAVE INTEGRAL MANUAL ON / OFF SWITCH.
3. WALL SENSORS SHALL BE LEVITON MODELS AS FOLLOWS:
   PASSIVE INFRARED SINGLE ZONE: OSMT-MDx
   PASSIVE INFRARED 0-10V DIMMING: ODD10-IDx SENSORS SHALL BE CONFIGURED SUCH THAT THEY ARE MANUAL ON TO 100%, AUTOMATIC OFF.
4. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR WIRING AND ADJUSTMENT OF SENSORS.
5. SENSORS SHALL BE ADJUSTED TO SATISFACTION OF OWNER AND ARCHITECT.

1 WALL BOX VACANCY SENSOR WIRING DETAIL
NOT TO SCALE



NOTES:

1. SENSORS SHALL BE AS MANUFACTURED BY LEVITON OR EQUAL
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR WIRING AND ADJUSTMENT OF SENSORS.
3. SENSORS SHALL BE ADJUSTED TO SATISFACTION OF OWNER AND ARCHITECT.
4. OCCUPANCY SENSORS SHALL BE DUAL TECHNOLOGY, MODELS AS INDICATED ABOVE.
5. PROVIDE AND FIELD VERIFY EXACT LOCATIONS OF ROOM CONTROLLERS.
6. PROVIDE ALL POWER PACKS, MODULES, SWITCHES, CONTROLLERS, DIMMERS, AND ALL OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
7. PROVIDE VOLTAGE BARRIER IN SHARED BOXES TO SEPARATE LOW VOLTAGE FROM LINE VOLTAGE

2 TYPICAL VACANCY SENSOR WIRING DETAIL
NOT TO SCALE

LIGHTING CONTROL MATRIX

COMMON SPACE TYPES	CONTROL FUNCTIONS AND REQUIREMENTS											
DESCRIPTION	CONTROL TYPE	SENSOR(S)	LOCAL CONTROL	RESTRICTED TO MANUAL ON	RESTRICTED TO PARTIAL AUTOMATIC ON	BILEVEL LIGHTING CONTROL	AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS FOR SIDELIGHTING	AUTOMATIC DAYLIGHT RESPONSIVE CONTROLS FOR TOPLIGHTING	AUTOMATIC PARTIAL OFF	AUTOMATIC FULL OFF	SCHEDULE SHUTOFF	NOTES
CONFERENCE ROOM	DIMMING	VACANCY	X	X		X	N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10
COPY/PRINT ROOM	DIMMING	VACANCY	X	X		X	N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10
CORRIDOR	DIMMING	VACANCY	X				N/A	N/A	X			1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12
ENCLOSED OFFICE	DIMMING	VACANCY	X	X		X	N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10
RESTROOM	ON/OFF	VACANCY	X				N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10
LOBBY	DIMMING	VACANCY	X	X			N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10
LOCKER ROOM	DIMMING	VACANCY	X	X		X	N/A	N/A		X		1, 2, 4, 5, 6, 7, 9, 10

NOTES:

1.) SENSOR FAILIURE SHALL RESULT IN 100% ILLUMINATION.
2.) AUTO/SCHEDULED OFF.
3.) FIXTURE SHALL AUTOMATICALLY BE REDUCED TO AT LEAST 50% WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE.
4.) FIXTURE SHALL AUTOMATICALLY INCREASE ILLUMINATION TO 100% WHEN OCCUPIED.
5.) ALL LIGHTING CONTROLS SHALL BE IN ACCORDANCE WITH ASHRAE 90.1 2019, AND LOCAL ORDINANCES
6.) PROVIDE ALL POWER PACKS, MODULES, SWITCHES, CONTROLLERS, DIMMERS, RELAYS, AND ALL OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
7.) REFER TO DRAWING E-2.1 FOR LIGHTING CONTROL DETAILS.
8.) LOW-VOLTAGE LIGHTING CONTROLS SHALL UTILIZE MULTIPLE BUTTON CONFIGURATION TO MINIMIZE NUMBER OF DEVICES PER ROOM.
9.) STAND ALONE CONTROL, SEE DETAIL #1 & #2 ON DRAWING E-2.1.
10.) INCLUDE PROGRAMMING AND START-UP FOR A COMPLETE AND OPERATIONAL SYSTEM TO THE SATISFACTION OF THE OWNER.
11.) LIGHTING IN SPACE IS REQUIRED FOR 24/7 OPERATION.
12.) LOCAL CONTROL THAT BE LOCATED IN REMOTE LOCATION FOR SAFETY AND SECURITY.

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1	022726	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:

VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS

415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE CONSULTING — 3600 Horizon Blvd., Suite 203, Trevose, PA 19053, O: (215) 322-7711, F: (215) 322-7799, www.holsteinwhite.com

SEAL:

JEFFREY E. HOLSTEIN
NJ PE NO. 24GE04644300
NJ AUTH NO. 24GA281437000

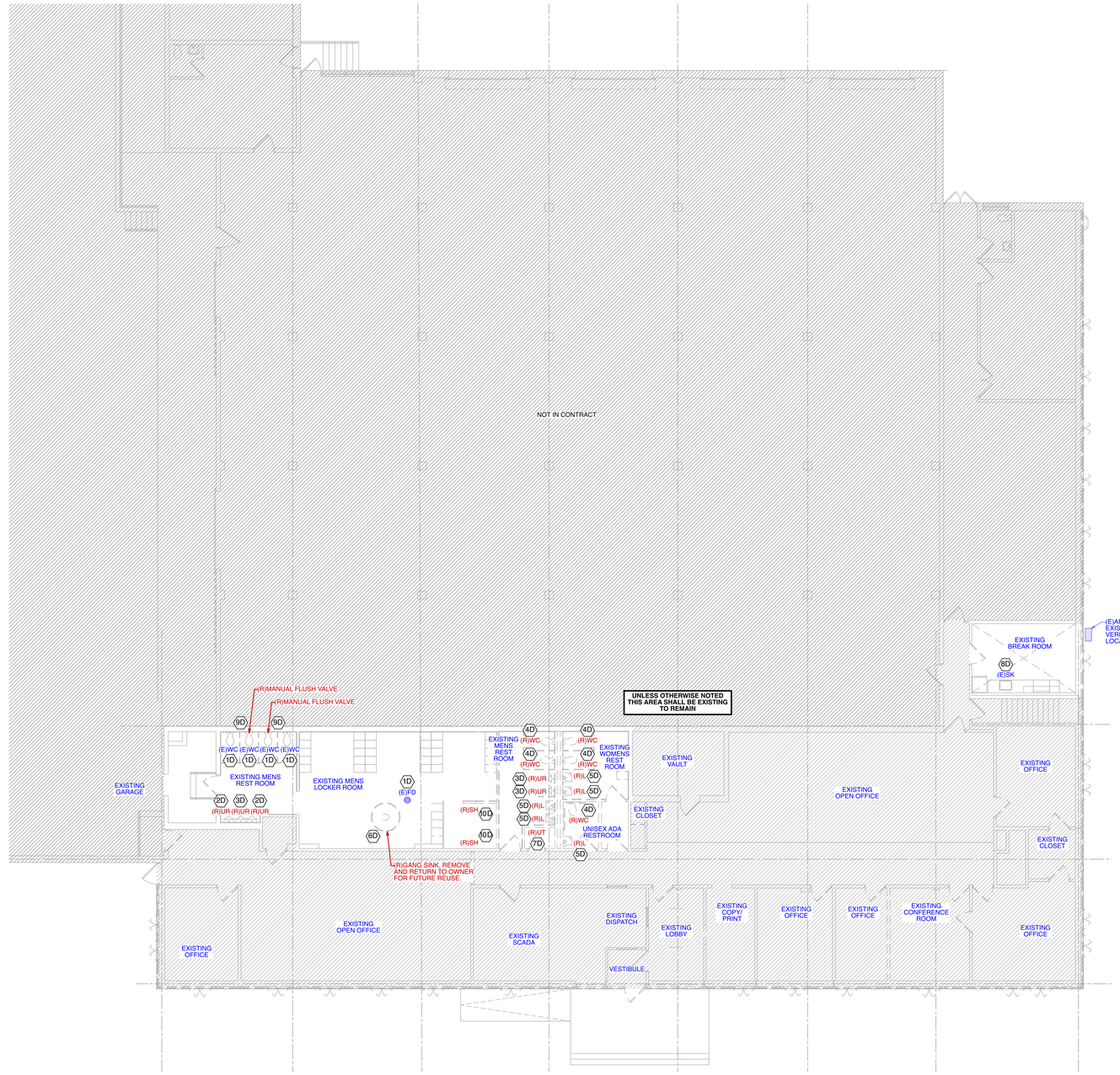
DRAWING MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWING.

DRAWING ARCHITECTS E-4.0DOC, COPYRIGHT 2020.

TITLE: ELECTRICAL SCHEDULES & DETAILS

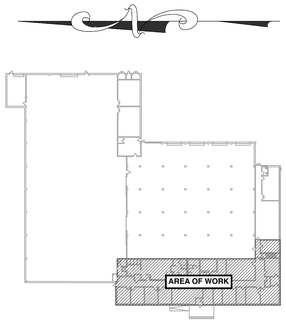
SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REV'D:: RG
DRAWN BY: EP
CHKD.BY: JH

DRAWING NO: E-2.1



1 PARTIAL GROUND FLOOR DEMOLITION PLUMBING PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

NOT TO SCALE

EXISTING CONDITIONS NOTE

1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM DECEMBER 5, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

DRAWING SYMBOLS

(E)	EXISTING PLUMBING WORK TO REMAIN
(RE)	EXISTING PLUMBING WORK TO BE RELOCATED
	EXISTING PLUMBING WORK TO REMAIN
(R)	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	NEW SANITARY WORK
	NEW VENTING WORK
	NEW COLD WATER PLUMBING WORK
	NEW HOT WATER PLUMBING WORK
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION, CUT AND CAP

DEMOLITION GENERAL NOTES

1. REMOVE DESIGNATED ELEMENTS AS SHOWN ON DRAWINGS.
2. ALL PLUMBING EQUIPMENT AND ASSOCIATED WATER AND SANITARY PIPING DESCRIBED SHALL BE DEMOLISHED AND REMOVED. CAP AT MAIN.
3. COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.
4. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
5. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
6. ERECT AND MAINTAIN TEMPORARY PARTITIONS TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SMOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
7. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
8. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN CONDITION AT THE END OF EACH DAY.
9. COORDINATE ALL DEMOLITION WORK WITH LANDLORD PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
10. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS WORK TO CONFIRM THE EXTENT OF DEMOLITION.
11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
12. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

DEMOLITION SHEET NOTES

1D CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL. ALL COLD WATER PIPING AND ALL ASSOCIATED APPURTENANCES SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY.

2D URINAL SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES, ALL SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES SHALL BE CAPPED FOR FUTURE CONNECTION.

3D URINAL SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

4D WATER CLOSET SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

5D LAVATORY SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

6D GANG SINK SHALL BE REMOVED AND RETURNED TO OWNER FOR FUTURE REUSE. DEMOLISH AND REMOVE ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

7D UTILITY TUB SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

8D CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL.

9D MANUAL FLUSH VALVE SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

10D SHOWER SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY.

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		REVISIONS	
1	022726	ISSUED FOR BID	

APPROVAL:

PROJECT:

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100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 203
Trevose, PA 19053
O: (215) 322-7710
F: (215) 322-7711
www.holsteinwhite.com

SEAL:

SCOTT A. WHITE
NJ PE NO. 24GE04077500
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR DEMOLITION PLUMBING PLAN

DRAWINGS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

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SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REVD.: BA
DRAWN BY: RY
CHKD.BY: SW

DRAWING NO: DP-1.0

EXISTING CONDITIONS NOTE

1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM DECEMBER 5, 2025.
2. ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

DRAWING NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
3. CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE LOCATION OF THE PIPING, DUCT WORK, EQUIPMENT, ARCHITECTURAL PLANS, AND STRUCTURAL ELEMENTS IN THE FIELD.
5. ALL PIPING CONNECTIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY FINAL CONNECTION POINTS IN FIELD.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL ROOF AND EXTERIOR WALL PENETRATIONS IN THE FIELD WITH LANDLORD PRIOR TO ROUGHING-IN.
7. CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
8. CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

DRAWING SYMBOLS

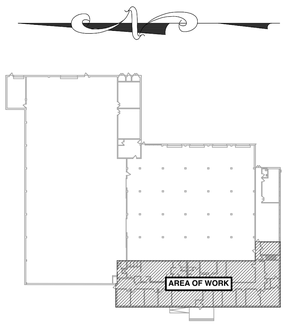
(E)	EXISTING PLUMBING WORK TO REMAIN
(RE)	EXISTING PLUMBING WORK TO BE RELOCATED
	EXISTING PLUMBING WORK TO REMAIN
(R)	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	NEW SANITARY WORK
	NEW VENTING WORK
	NEW COLD WATER PLUMBING WORK
	NEW HOT WATER PLUMBING WORK
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION, CUT AND CAP

SHEET NOTES

1. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL INSPECT AND VIDEOSCOPE EXISTING SANITARY MAIN TO VERIFY THE FOLLOWING: LOCATION, DEPTH, DIRECTION OF FLOW AND CONDITION OF THE EXISTING SEWER LATERAL. CONTRACTOR SHALL SUBMIT A COPY OF THE VIDEOSCOPE. IF THERE ARE REPAIRS REQUIRED TO REUSE EXISTING SANITARY LATERAL, A PROPOSED COST BREAKDOWN SHALL BE SUBMITTED TO THE OWNER AND ARCHITECT FOR REVIEW.
2. CONTRACTOR SHALL EXTEND AND CONNECT NEW SANITARY PIPING TO NEAREST APPROPRIATELY SIZED EXISTING SANITARY MAINSTACK. CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION IN FIELD.
3. CONTRACTOR SHALL EXTEND AND CONNECT NEW SANITARY VENT PIPING TO NEAREST APPROPRIATELY SIZED EXISTING SANITARY VENT THROUGH ROOF/ VENT MAIN. CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION IN FIELD.
4. CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL.
5. CONTRACTOR SHALL REPLACE EXISTING URINAL WITH NEW URINAL (REFER TO PLUMBING FIXTURE SCHEDULE ON P-0.0). CONTRACTOR SHALL MODIFY EXISTING SANITARY PIPING AS REQUIRED TO INSTALL NEW FIXTURES. VERIFY EXACT LOCATION OF EXISTING SANITARY PIPING IN THE FIELD.

1 PARTIAL GROUND FLOOR SANITARY PLAN

SCALE: 1/8" = 1' - 0"



KEY PLAN

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PROJECT:

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Joseph F. McKeman Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

HOLSTEIN WHITE
3600 Horizon Blvd., Suite 300
Trevose, PA 19053
O: (215) 322-7711
F: (215) 322-7159
www.holsteinwhite.com

SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR SANITARY PLAN

SEAL:

DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR FABRICATION. DO NOT SCALE DRAWING.

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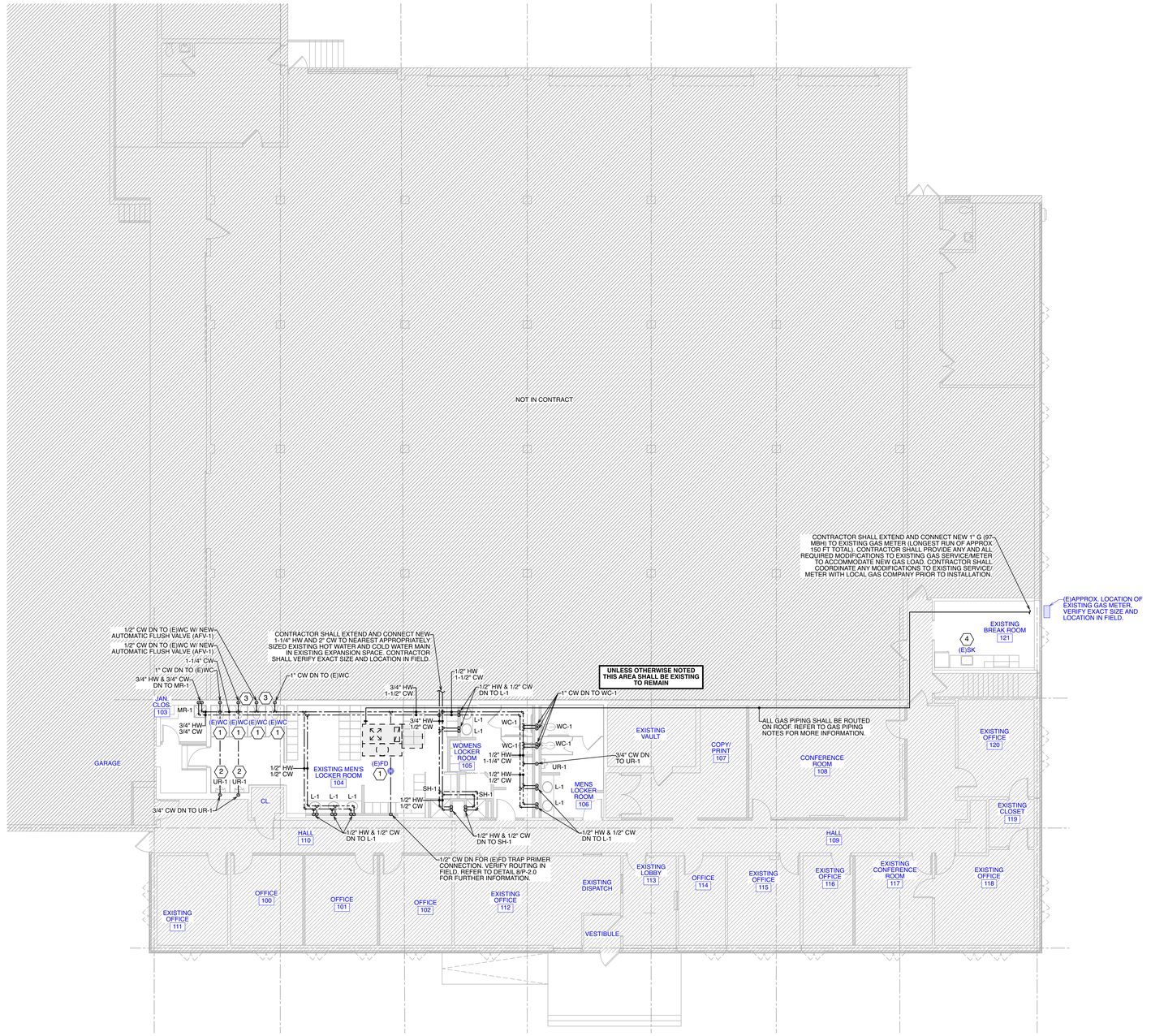
SCALE:	AS NOTED
PROJ.NO.:	1344
DATE:	01/30/26
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	SW

DRAWING NO:

P-1.0



1 PARTIAL GROUND FLOOR DOMESTIC WATER PLAN

SCALE: 1/8" = 1' - 0"

EXISTING CONDITIONS NOTE

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DRAWING SYMBOLS

(E)	EXISTING PLUMBING WORK TO REMAIN
(RE)	EXISTING PLUMBING WORK TO BE RELOCATED
	EXISTING PLUMBING WORK TO REMAIN
(R)	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
	NEW SANITARY WORK
	NEW VENTING WORK
	NEW COLD WATER PLUMBING WORK
	NEW HOT WATER PLUMBING WORK
	POINT OF CONNECTION TO EXISTING
	POINT OF DEMOLITION, CUT AND CAP

DRAWING NOTES

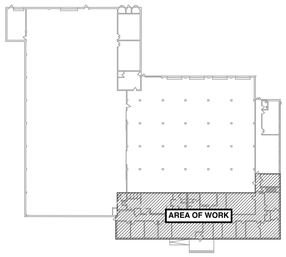
1. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
3. CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE LOCATION OF THE PIPING, DUCT WORK, EQUIPMENT, ARCHITECTURAL PLANS, AND STRUCTURAL ELEMENTS IN THE FIELD.
5. ALL PIPING CONNECTIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY FINAL CONNECTION POINTS IN FIELD.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL ROOF AND EXTERIOR WALL PENETRATIONS IN THE FIELD WITH LANDLORD PRIOR TO ROUGHING-IN.
7. CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
8. CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

SHEET NOTES

1. CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL. CONTRACTOR SHALL INSTALL NEW COLD WATER PIPING AS INDICATED ON PLAN.
2. CONTRACTOR SHALL REPLACE EXISTING URINAL WITH NEW URINAL (REFER TO PLUMBING FIXTURE SCHEDULE ON P-0.0). CONTRACTOR SHALL INSTALL NEW COLD WATER PIPING AS INDICATED ON PLAN.
3. CONTRACTOR SHALL REPLACE EXISTING MANUAL FLUSH VALVE WITH NEW AUTOMATIC FLUSH VALVE (REFER TO PLUMBING FIXTURE SCHEDULE ON P-0.0). CONTRACTOR SHALL INSTALL NEW COLD WATER PIPING AS INDICATED ON PLAN.
4. CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL.

GAS PIPING NOTES

1. ALL GAS PIPING SHALL BE INSTALLED PER THE REQUIREMENTS OF INTERNATIONAL FUEL GAS CODE 2021.
2. ALL EXPOSED EXISTING AND NEW GAS PIPING & FITTING SHALL BE COATED OR WRAPPED WITH A CORROSION-RESISTANT MATERIAL.
3. 1" GAS (97 MBH) SIZED FOR LONGEST RUN OF 150 FT FROM METER PER IFGC 2021, TABLE 402.4(1), LESS THAN 2 PSI, 0.3 IN. W.C. PRESSURE DROP, & 0.60 SPECIFIC GRAVITY.
4. ALL GAS PIPING INSTALLED ON THE ROOF SHALL BE ELEWATED NOT LESS THAN 3-1/2" ABOVE SURFACE OF THE ROOF.



KEY PLAN

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SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

TITLE: PARTIAL GROUND FLOOR DOMESTIC WATER PLAN

SEAL:

OWNER/GC MUST BE VERIFIED BY CONTRACTOR / NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

HOLSTEIN WHITE ARCHITECTS & ASSOC. COPYRIGHT 2025

SCALE:	AS NOTED
PROJ.NO.:	1344
DATE:	01/30/26
REV'D.:	BA
DRAWN BY:	RY
CHKD.BY:	SW

DRAWING NO: P-1.1

SUMP PUMP SYSTEM SCHEDULE	
Unit Designation	**SP-1**
Basis of Design	Ebara
Model Number	Optima-3MS1
Side Inlet / Top Outlet Size (in.)	3" / 2"
Vent Size (in.)	1-1/2"
System	Submersible Sump Pump
Design Flow Rate (GPM)	20
Design Total Head (ft.)	13
Motor Speed (RPM)	3,350
Minimum Basin Size (dia. x D) (in.)	24"O x 24"
Electrical	**115 / 10 / 60**
HP	1/3
Amps	4.4
Accessories	
Remote Alarm / Control Panel	Yes, Wall-Mtd.
On / Off Switch	Yes
Starters & Disconnects	Yes
Check Valve	Yes
Low Suction Cut-off	Yes
Lights and Horns	Yes
High Water Alarm	Yes
Float Controls	Yes
Electrical Connections	20 ft. Cord
General Notes	

1. Provide all required accessories to install sump pump system per manufacturer's recommendations. Verify all electrical requirements with Electrical Contractor prior to ordering and installing.
2. Plumbing Contractor shall confirm exact control panel location with Owner / Architect.

PLUMBING FIXTURE SCHEDULE

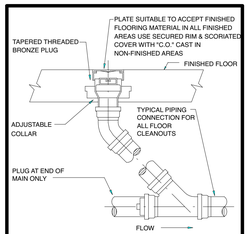
NOTE: ALL PLUMBING FIXTURES AND FAUCETS SHALL BE PROVIDED IN CUSTOM COLORS AND FINISHES. COORDINATE COLOR & FIXTURE SELECTION WITH THE ARCHITECT AND OWNER.

Tag	Fixture Type	Mount	Fixture Mfrr./Model #	Domestic Water		Sanitary		Faucet Mfrr./Model #	FlushValve Mfrr./Model #	Seat Mfrr./Model #	Remarks
				CWS	HWS	Drain	Trap				
WC-1	Water Closet ADA	Floor	American Standard 2234.001	1"	---	4"	Integral	---	Sloan ROYAL 113 SMO	American Standard 5901.100	Floor-mounted, vitreous china, powerful direct-fed siphon jet action, elongated bowl, white heavy duty open front less cover toilet seat, battery powered sensor operated flush valve, 1.6 gpf.
L-1	Lavatory ADA	Undercounter	American Sandard 0476.028	1/2"	1/2"	1-1/4"	1-1/4"	Elkay LK422L4	---	---	Aqualyn Countertop Sink, ADA lavatory, vitreous china, self-rimming, front over flow. P-trap, drain, trim, stops, offset tailpiece with metal grid strainer, J. R Smith lavatory support with concealed arms 0700, single lever handle faucet, hot limt safety stop (adjust during installation), & Truebro LavGuard to cover all exposed piping located under the lavatory.
SK-1	Sink	Countertop	Elkay LRAD172050	1/2"	1/2"	1-1/2"	1-1/2"	Delta 27C2974-R7	---	---	Countertop, single bowl, stainless steel with lustrous finish, sound dampening undercoat, P-trap, drain, trim, stops, two handle faucet, swivel gooseneck, and metal grid strainer. Provide thermostatic mixing valve set at 110°F (Powers M/N: LFe480).
AFV-1	Automatic Flush Valve	Wall	---	3/4"	---	---	---	---	Sloan ROYAL 113 SMO	---	Battery Powered Sensor Operated Automatic Flush Valve, 0.125 GPF
UR-1	Urinal	Wall	American Standard 6590.001	3/4"	---	4"	Integral	---	Sloan ROYAL 186 SMO	---	Top Spud, Vitreous China, 0.125 GPF, Strainer, Battery Powered Sensor Operated, Mounting Bracket. Install at ADA Height as necessary.
MR-1	Mop Sink	Floor	Florestone MSR-2424	3/4"	3/4"	3"	3"	Moen 8124	---	---	24"x24" cast stone floor model mop sink with 3" outlet stainless steel rim gaurd and combination supply faucet with P-trap, integral stops and vacuum breaker hose connection.
SH-1	Shower	Floor	Freedom Showers APFQ3838BF1PRRF	1/2"	1/2"	2"	2"	Integral	---	---	ADA Transfer Shower, Fiberglass Construction, center drain location, textured slip resistant floor, include ADA accessory package, include all individual accessories and left or right handed valve wall option (Left handed for "Existing Mens Locker Room - 104" and Right handed for "Womens Locker Room - 105").

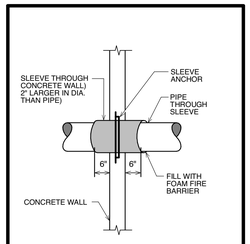
Notes:
1. Provide Water Hammer Arrestors similar to P.P.P., Industries Series SWA on the domestic water branch pipes serving the flush valve fixtures. Install and size per manufacturer's recommendations.
2. Provide Trap Primer Valves similar to P.P.P., Inc. Series PR-500 for all floor drains and floor sinks. Install and size per manufacturer's recommendations.
3. All Floor Cleanouts (F.C.O) shall be similar to Jay R. Smith 4040.
4. All Wall Cleanouts (W.C.O) shall be similar to Jay R. Smith 4710.

MATERIAL AND INSULATION SCHEDULE

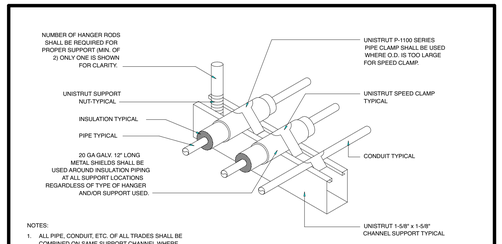
System	Material		Insulation				Remarks
	Basis of Design	Alternate	Basis of Design	Type	Wall (in)	Vapor Barrier	
Domestic CW - Above Grade	Type "L" Copper	-------	Certainteed	500° Snap On	1/2	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813
Domestic HW - Above Grade	Type "L" Copper	-------	Certainteed	500° Snap On	1	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813
Sanitary Piping - Above Grade	Cast Iron	Sch.40 PVC Solid Wall	------	------	------	------	
Sanitary Piping - Below Grade	Service Weight Cast Iron	Sch.40 PVC Solid Wall	------	------	------	------	
Sanitary Vent Piping	Cast Iron	Sch.40 PVC Solid Wall	------	------	------	------	
Natural Gas Piping	Sch. 40 Black Steel	------	------	------	------	------	Comply with Utility company standards.



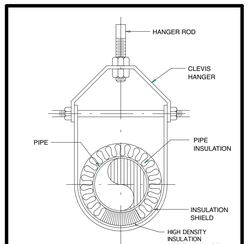
1 TYPICAL CLEAN OUT DETAIL
NOT TO SCALE



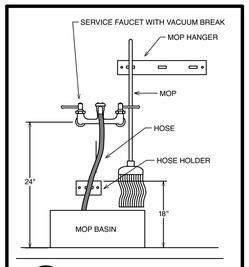
2 PIPE SLEEVE DETAIL
NOT TO SCALE



3 PIPING SUPPORT DETAIL
NOT TO SCALE

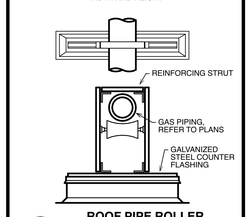


4 CLEVIS HANGER DETAIL
NOT TO SCALE

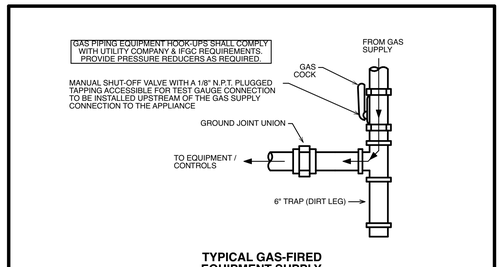


5 MOP RECEPTOR DETAIL
NOT TO SCALE

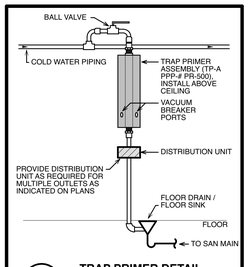
ALL GAS PIPING ON ROOF SHALL UTILIZE PATE (MODEL #PRS-1,2,5) FULLY ADJUSTABLE, HEAVY DUTY PIPE ROLLER SUPPORTS. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR ROLLER SUPPORT LENGTH, WIDTH AND HEIGHT



6 ROOF PIPE ROLLER SUPPORT DETAIL
NOT TO SCALE



7 TYPICAL GAS-FIRED EQUIPMENT SUPPLY PIPING DETAIL
NOT TO SCALE



8 TRAP PRIMER DETAIL
NOT TO SCALE

PLUMBING SPECIFICATIONS

GENERAL WORK:

1. The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
3. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
4. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
5. Plumbing work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
6. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
7. The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
8. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
9. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
10. The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the 2021 National Standard Plumbing Code (NJ Edition), the codes of the International Code Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
11. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
12. The Contractor shall coordinate with the General Contractor and locate all required cutting and patching and the like required by the installation of the plumbing work.
13. All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
14. Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments,, component service, and provide a minimum 2" clearance between all piping and other work.
15. Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
16. The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.

PLUMBING:

1. All shutoff valves, fixture trims, and plumbing specialties shall be Lead Free per the current regulations.
2. All shutoff valves shall be ball or gate valves. All valves shall be bronze, 125 psi WP, solid wedge disc, non-rising stem, soldered ends. Provide shut-off valves for all connected equipment and plumbing fixtures.
3. The Contractor shall provide a sanitary drain from all fixtures. The Contractor shall provide all required vent piping for all fixtures installed. Pitch Drainage Piping Equal or Smaller than 3"Ø at 1/4" per foot, Pitch Drainage Piping 4"Ø or Larger at 1/8" per foot.
4. Provide cleanouts in new sanitary and piping 50 feet on centers on all horizontal piping, at direction changes of 45° or more, and elsewhere required by codes. Cleanouts accessible through walls shall be provided with chrome-plated covers and frame, in floors with recessed top to receive floor finishing material.
5. The Contractor shall sterilize all new domestic water piping as required by the plumbing code and the Health Department. The plumbing contractor shall provide water hammer arresters as required. Water hammer arresters: Smith Series 5000 stainless steel Hydrotools, P.D.I. certified and A.S.S.E. approved.
6. Alternate sanitary vent piping shall be standard weight uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A74 with caulked oakum and lead joints, no-hub if permitted by code, DWV Copper, or standard weight galvanized steel with galvanized cast iron banded and recessed screwed drainage fittings, ASTM A126. Alternate sanitary piping within the building shall be standard weight, uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A 74 with caulked oakum and lead joints or DWV copper. Codes permitting, no-hub may be used.
7. Provide thermostatic mixing valve at each lavatory, exam room sink, and any sink where hand washing will take place. The mixing valve shall be similar to Powers Model LFe480, with the following devices: union inlet strainers, check stops, and shutoff valves. Mixing valve shall be installed under the counter or fixture being served. Install per manufacturer's recommendations. Leaving water temperature shall be adjusted to 110°F.
8. Provide trap primers for all floor drains. Trap primers shall be supplied with a 1/2" cold water branch pipe. The pipe shall be installed below grade and insulated with 1" Armaflex.
9. Floor Drains shall be installed according to the 2021 National Standard Plumbing Code (NJ Edition).
10. All Plumbing must be tested and approved by plumbing inspector and meet the requirements of the 2021 National Standard Plumbing Code (NJ Edition).
11. All potable water outlets shall be protected from cross connection as required per the 2021 National Standard Plumbing Code (NJ Edition) and local utility rules and regulations.
12. Provide an unconditional one-year written guarantee to replace or repair all defective work.
13. All hole drilling for pipe hangers or floor and wall penetrations shall be by the Plumbing Contractor for Plumbing work.
14. All piping shall be supported by pipe hangers of similar material as pip ng being supported. Suspend from building structure with spacing of hangers not to exceed requirements of the latest edition of the IBC 2021 and the 2021 National Standard Plumbing Code (NJ Edition) as well as the local authority having jurisdiction. Do not use wire or perforated metal strap to support piping. Do not rest piping on any part of building structure for support. Provide all necessary hangers, inserts, supports required to properly support the equipment and piping. Hanger and supports shall be made of the same material as the material of pipe or equipment which is being supported.
15. All plumbing fixtures and fixture trim shall be provided as specified herein. Fixtures shall be complete with all necessary wall hangers & supports, supply stop valves, 17-gauge chrome-plated brass drainage fittings & p-trap, and chrome-plated escutcheons. All exposed piping shall be chrome-plated brass. all fixtures shall be installed level and plumb according to manufacturer's recommendations and code requirements. Provide mildew resistant joint sealant similar to Phenoseal vinyl adhesive caulk.
16. Seismic protection for the Plumbing system shall be provided as required by the IBC 2021.
17. All gas piping, electric, and other rooftop utilities are to be run from below and brought directly to the machinery they service.
18. Contractor to X-Ray slab/floor for utilities prior to saw cutting, coring, or demolition of floors.
19. All trenches to be backfilled and compacted to 95% compaction, or filled with 3/4" clean stone. Landlord to inspect compaction prior to pouring concrete.

ELECTRICAL COORDINATION

1. IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO COORDINATE THE LOCATIONS OF PIPING WITH THE ELECTRICAL CONTRACTOR. PLUMBING PIPING SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
2. COORDINATION OF PIPING LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. APPROVAL OF PLUMBING SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
3. PER NFPA 70, ARTICLE 110.26(F); DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.

No.	DATE	DESCRIPTION	REV'D BY
1	022726	ISSUED FOR BID	

REVISIONS

APPROVAL:

PROJECT:
VINELAND MUNICIPAL ELECTRIC UTILITY BUILDING ALTERATIONS
415 N. WEST AVENUE
VINELAND, NEW JERSEY 08360

Joseph F. McKernan Jr., Architects & Associates
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

TITLE:
PLUMBING SCHEDULES & DETAILS

HOLSTEIN WHITE CONSULTING
3600 Horizon Blvd., Suite 300 Trevose, PA 19053
O: (215) 322-7111
F: (215) 322-7799
www.holsteinwhite.com

SEAL:

SCOTT A. WHITE
NJ PE NO. 24GE04677900
NJ AUTH NO. 24GA28143700

DRAWINGS NOT TO BE VERIFIED BY CONTRACTOR: NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWING.

SCALE: AS NOTED
PROJ.NO.: 1344
DATE: 01/30/26
REVD.: BA
DRAWN BY: RY
CHKD.BY: SW

DRAWING NO:
P-2.0

DRAWINGS ARCHITECTS 4 ASSOC. COPYRIGHT 2025

PLEASE USE THE FOLLOWING DOCUMENTS WHEN SUBMITTING BOTH YOUR ORIGINAL AND DUPLICATE BID

BID CHECKLIST

Failure by the bidder to submit with their bid all of the MANDATORY Items that are checked below shall be cause for rejection of the bid.

COV BID # 2026-10
Alterations at 415 N.W. Avenue

April 30, 2026

	REQUIRED WITH BID	INITIAL & SUBMIT
1. Bid Guarantee **(IN DUPLICATE** (a bid bond is not a consent of surety)	X	
2. Certificate or Consent of Surety Form **(IN DUPLICATE)**	X	
3. Statement of Ownership Disclosure **(IN DUPLICATE)**	X	
4. EEO/Affirmative Action Compliance Notice **(IN DUPLICATE)**	X	
5. Check List **(IN DUPLICATE)**	X	
6. Proposal **(IN DUPLICATE)**	X	
7. Acknowledgement of Receipt of Addenda **(IN DUPLICATE)**	X	
8. List of Subcontractors per NJSA 40A:11-16, if any, If none, state so. **(IN DUPLICATE)**	X	

The items that are checked below shall be submitted no later than the time period indicated.

Required as Conditioned	Item	Read, Initialed Shall Submit
X	**Performance Bond (Due with the executed contract)**	
X	**Labor and Material Payment Bond (Due with the executed contract)**	

(continued on next page)

_____	**Maintenance Bond** **(Due with the executed contract)**	_____
____X____	**Public Works Contractor Registration Certificate(s) for the General or Prime Contractor and any Subcontractor submitted in the bid proposal with a date effective at the time the proposal is submitted** **(Due prior to contract award)**	_____
____X____	**New Jersey Business Registration Certificate** **(Due prior to contract award)**	_____
____X____	**Disclosure of Investment Activities in Iran** **(Due prior to contract award)**	_____
____X____	**Certification of Non-Involvement in Prohibited Activities in Russia and Belarus** **(Due prior to contract award)**	_____
____X____	**Certificate(s) of Insurance as specified In the Bid Document** **(Due with executed contract)**	_____
____X____	**Certification of Non-Debarment for Federal Contracts.** **(Due prior to contract award)**	_____
____X____	**Certification of Regarding Debarment Suspension.** **(Due prior to contract award)**	_____

The items that are checked below are to be reviewed by the bidders.

Review Required	Item	Read & Initialed
____X____	**Americans with Disabilities Act Language**	_____
____X____	**General Instructions**	_____
____X____	**Technical Specifications**	_____

THE ITEMS AND/OR FORMS INDICATED ABOVE SHALL BE REVIEWED AND/OR SUBMITTED WITH YOUR BID. THIS CHECKLIST IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. ALL REQUIRED DOCUMENTATION MAY NOT BE LISTED ABOVE AND IT SHALL BE THE RESPONSIBILITY OF THE BIDDER TO CAREFULLY REVIEW THE COMPLETE BID PACKAGE, FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS OF THIS BID AND TO SUBMIT WITH THEIR BID ALL REQUIRED DOCUMENTATION.

(continued on next page)

SIGNATURE

The undersigned hereby acknowledges that they have submitted and/or reviewed the above-listed requirements:

_____	_____
(COMPANY)	**(NAME – PLEASE PRINT OR TYPE)**
_____	_____
(SIGNATURE)	**(DATE)**

BID PROPOSAL

PROJECT IDENTIFICATION:	VINELAND MUNICIPAL ELECTRIC UTILITY- BUILDING RENOVATIONS 415 NORTH WEST AVENUE VINELAND, NEW JERSEY 08360
THIS BID IS SUBMITTED TO:	DIVISION OF PURCHASING CITY OF VINELAND 640 EAST WOOD STREET P.O. BOX 1508 VINELAND, NEW JERSEY 08362-1508
BID SUBMITTED BY:	(NAME) _____ _____

---

1. The undersigned Bidder proposes and agrees, if the Bid is accepted, to enter into an Agreement with OWNER, in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance as stated in Section 5.3 of the Instructions to Bidders. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of Owner's Notice of Award.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement:

   (a) Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number	Date	Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

   (b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

   (c) Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 3.2 of the General Conditions, and accepts the determination set forth in Paragraph GC-3.2.2 of the General Conditions, as may be amended by the Supplemental Conditions, of the extent the technical data contained in such reports and drawings upon which Bidder is entitled to rely.

(d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise which may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

(e) Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by Bidder in order to perform and furnish the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.3 of the General Conditions.

(f) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

(g) Bidder has given ARCHITECT written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ARCHITECT is acceptable to Bidder.

(h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. Bidder will complete the Work for the price(s) shown.

Where materials are furnished by the OWNER, the prices provided herein are for installation only. Otherwise the prices include furnishing and installation of materials.

DIVISION I – GENERAL CONSTRUCTION

Base Bid – The Contractors Grand Lump Sum to complete the items depicted on the Contract Documents;

_____DOLLARS ($_____).

ALTERNATE NO. 1 (Add) - Provide the cost for replacing all existing windows with new storefront and casement sash as specified and detailed.

(ADD)_____DOLLARS ($_____)

ALTERNATE No. 2 (Add) - Additional cost for electrostatically painting the existing lockers.

(ADD)_____DOLLARS ($_____)

ALTERNATE No3 (Add) - Additional price to install all new lockers.

(ADD)_____DOLLARS ($_____)

ALTERNATE No. 4 (Add) – Provide the cost to install a resinous epoxy flooring in the rooms as indicated on the Room Finish schedule.

(ADD)_____DOLLARS ($_____).

5. Bidder will provide substitute equipment and/or materials (if any) as listed below in lieu of the specified equipment and/or materials in accordance with the General Requirements in Specification Section 01600 – Materials and Equipment.

   a. OWNER may select items of any manufacturer or supplier listed in the following tabulation. Bidder will furnish and install such items selected for a Contract Price equal to the lump sum Contract Price, adjusted by the amount of deduction for the substituted item(s).

   b. In the following tabulations, the name of the manufacturer or supplier entered on line (a) is the name of the manufacturer or supplier named in the Specifications for that item and the cost for providing that specified item is included in the lump sum Contract Price. If the name of the manufacturer or supplier is not shown on line (a), it is understood that the lump sum Contract Price includes the cost for providing the item furnished by the manufacturer or supplier first named in that portion of the Specification pertaining to the equipment and/or materials being substituted.

   c. Names of alternative manufacturers and suppliers are shown on lines (b) and (c) with the respective prices to be deducted from the lump sum Contract Price should the OWNER elect to accept the alternative item.

ALTERNATIVE EQUIPMENT AND/OR MATERIALS

Spec. Section	Item and Manufacturer of Supplier	Deduct from Base Bid
_____	(a)_____	_____
	(b)_____	_____
	(c)_____	_____

_____	(a)_____	_____	
	(b)_____	_____	
	(c)_____	_____	
_____	(a)_____	_____	
	(b)_____	_____	
	(c)_____	_____	

6. Bidder agrees that the Work will be substantially complete within ten (10) months after the date when the Contract Times commences to run as provided in Paragraph 2.3 of the General Conditions.

7. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

8. The following documents are attached to and made a condition of this Bid:

   (a) Statement of Ownership
   (b) Non-Collusion Affidavit
   (c) No Material Change of Circumstances Affidavit
   (d) Information describing the proposed alternative equipment and/or materials
   (e) Proof of Contractor Registration with State of New Jersey
   (f) Proof of Business Registration

9. The terms used in this Bid which are defined in the General Conditions of the Contract Documents have the meanings assigned to them in the General Conditions.

10. Bid prices will be firm for a period of sixty (60) days after the date established for receiving bids.

SUBMITTED on_____, 20____.

If Bidder is:

AN INDIVIDUAL

By_____(SEAL)

(Individual's Name)

doing business as:_____

Business address:_____

Phone No.:_____

A PARTNERSHIP

By_____(SEAL)

(Firm Name)

_____

(General Partner)

Business address:_____

Phone No.:_____

A CORPORATION

By_____(SEAL)

(Corporation Name)

_____

(state of incorporation)

By_____

(name of person authorized to sign)

_____

(Title)

(Corporate Seal)

Attest_____

(Secretary)

Business address:_____

Phone No.:_____

A JOINT VENTURE

By_____

(Name)

_____

(Address)

By_____

(Name)

_____

(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).

PLEASE PRINT (LEGIBLY) OR TYPE

COV BID 2026-10

Accompanying this proposal is a certified check in the amount of $_____, a cashier's check in the amount of $_____, or a bid bond in the amount of $_____, payable to the City of Vineland which is to be forfeited as liquidated damages, if in the event that this proposal is accepted, the undersigned shall fail to execute the contract or to furnish satisfactory bond as require.

COMPANY_____

ADDRESS_____

_____

TELEPHONE_____

WITNESS_____

BY_____
(Signature)

The bidder shall state on the line below, if a corporation, the name of the state in which incorporated.

_____
(Name-please print or type)

_____
(Title)

_____

DATE_____

(Contact Person Who Prepared Proposal)

_____
(Telephone Number)

Have you attached the required items listed on the Check List? Failure to do so may result in automatic rejection of this bid.

_____
(Federal I.D. Number)

_____
(Fax Number)

_____
(Email address)

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

Part I

Check the box that represents the type of business organization:

_ Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
¯ Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
For-Profit Corporation (any type)
_ Limited Liability Company (LLC)
¯ Partnership
¯ Limited Partnership
¯ Limited Liability Partnership (LLP)
Other (be specific): _____

Part II

The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. (**COMPLETE THE LIST BELOW IN THIS SECTION**)

OR

No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. (**SKIP TO PART IV**)

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Address

Part III
DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed**.

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above**. The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Address

Part IV
Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the _____ is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with _____ to notify the _____ in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the _____ to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

AFFIRMATIVE ACTION COMPLIANCE NOTICE
N.J.S.A. 10:5-31 and N.J.A.C. 17:27

GOODS AND SERVICES CONTRACTS
(INCLUDING PROFESSIONAL SERVICES)

This form is a summary of the successful bidder's requirement to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

The successful bidder shall submit to the public agency, after notification of award but prior to execution of this contract, one of the following three documents as forms of evidence:

(a) A photocopy of a valid letter that the contractor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter);

OR

(b) A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4;

OR

(c) A photocopy of an Employee Information Report (Form AA302) provided by the Division and distributed to the public agency to be completed by the contractor in accordance with N.J.A.C. 17:27-4.

The successful vendor may obtain the Affirmative Action Employee Information Report (AA302) from the contracting unit during normal business hours.

The successful vendor(s) must submit the copies of the AA302 Report to the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division). The Public Agency copy is submitted to the public agency, and the vendor copy is retained by the vendor.

The undersigned vendor certifies that he/she is aware of the commitment to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27.1 et seq. and agrees to furnish the required forms of evidence.

The undersigned vendor further understands that his/her bid shall be rejected as non-responsive if said contractor fails to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

COMPANY: _____ SIGNATURE: _____

PRINT NAME: _____ TITLE: _____

DATE: _____

FAILURE BY BIDDER TO COMPLETE AND RETURN THIS NOTICE WITH THEIR BID SUBMISSION SHALL BE CAUSE FOR THEIR BID TO BE REJECTED AS NON-RESPONSIVE

CITY OF VINELAND
ACKNOWLEDGMENT OF RECEIPT OF ADDENDA

Pursuant to N.J.S.A. 40A:11-23.1a, the undersigned bidder hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of notice, revision or addendum. Note that the local unit's record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid.

The undersigned Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Dated	Acknowledge Receipt (initial)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐**No addenda were received**:

Acknowledged for: _____
(Name of Bidder)

By: _____
(Signature of Authorized Representative)

Name: _____
(Print or Type)

Title: _____

Date: _____

DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN FORM

STATE OF NEW JERSEY
DEPARTMENT OF THE TREASURY - DIVISION OF PURCHASE AND PROPERTY
33 WEST STATE STREET, P.O. BOX 230 TRENTON, NEW JERSEY 08625-0230

BID SOLICITATION # AND TITLE: _____

VENDOR NAME: _____

Pursuant to N.J.S.A. 52:32-57, et seq. (P.L. 2012, c.25 and P.L. 2021, c.4) any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must certify that neither the person nor entity, nor any of its parents, subsidiaries, or affiliates, is identified on the New Jersey Department of the Treasury's Chapter 25 List as a person or entity engaged in investment activities in Iran. The Chapter 25 list is found on the Division's website at https://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf. Vendors/Bidders must review this list prior to completing the below certification. If the Director of the Division of Purchase and Property finds a person or entity to be in violation of the law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

CHECK THE APPROPRIATE BOX

☐ I certify, pursuant to N.J.S.A. 52:32-57, et seq. (P.L. 2012, c.25 and P.L. 2021, c.4), that neither the Vendor/Bidder listed above nor any of its parents, subsidiaries, or affiliates is listed on the New Jersey Department of the Treasury's Chapter 25 List of entities determined to be engaged in prohibited activities in Iran.

OR

☐ I am unable to certify as above because the Vendor/Bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the New Jersey Department of the Treasury's Chapter 25 List. I will provide a detailed, accurate and precise description of the activities of the Vendor/Bidder, or one of its parents, subsidiaries or affiliates, has engaged in regarding investment activities in Iran by completing the information requested below.

Entity Engaged in Investment Activities _____
Relationship to Vendor/ Bidder _____
Description of Activities _____
_____
_____

Duration of Engagement _____
Anticipated Cessation Date _____

**Attach Additional Sheets If Necessary.*

CERTIFICATION

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Vendor, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the State of New Jersey is relying on the information contained herein, and that the Vendor is under a continuing obligation from the date of this certification through the completion of any contract(s) with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I may be subject to criminal prosecution under the law, and it will constitute a material breach of my contract(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

_____ _____
Signature Date

_____
Print Name and Title

CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS

Pursuant to N.J.S.A. 52:32-60.1, et seq. (L. 2022, c. 3) any person or entity (hereinafter "Vendor[i]") that seeks to enter into or renew a contract with a State agency for the provision of goods or services, or the purchase of bonds or other obligations, must complete the certification below indicating whether or not the Vendor is identified on the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, available here: https://sanctionssearch.ofac.treas.gov/. If the Department of the Treasury finds that a Vendor has made a certification in violation of the law, it shall take any action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

I, the undersigned, certify that I have read the definition of "Vendor" below, and have reviewed the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, and having done so certify:

(Check the Appropriate Box)

○ A. That the Vendor is not identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ B. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ C. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list. However, the Vendor is engaged in activity related to Russia and/or Belarus consistent with federal law, regulation, license or exemption. A detailed description of how the Vendor's activity related to Russia and/or Belarus is consistent with federal law is set forth below.

_____

_____

_____

_____

_____

_____

(Attach Additional Sheets If Necessary.)

Signature of Vendor's Authorized Representative	Date
Print Name and Title of Vendor's Authorized Representative	Vendor's FEIN
Vendor's Name	Vendor's Phone Number
Vendor's Address (Street Address)	Vendor's Fax Number
Vendor's Address (City/State/Zip Code)	Vendor's Email Address

[i] Vendor means: (1) A natural person, corporation, company, limited partnership, limited liability partnership, limited liability company, business association, sole proprietorship, joint venture, partnership, society, trust, or any other nongovernmental entity, organization, or group; (2) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in Section 1701(c)(3) of the International Financial Institutions Act, 22 U.S.C. 262r(c)(3); or (3) Any parent, successor, subunit, direct or indirect subsidiary, or any entity under common ownership or control with, any entity described in paragraph (1) or (2).

CERTIFICATION REGARDING THE DEBARMENT

SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

I am _____ of the firm of _____,
(Your title) (Name of your Organization)

_____
(Address of your Organization)

CHOOSE ONE OF THE FOLLOWING

☐ A. I hereby certify on behalf of _____
(Name of your Organization)

That neither it nor its principals are included on the State Treasurer's and Economic Development Authority's or the Federal Government's list of Debarred, Suspended or Disqualified bidders as a result of action taken by any State or Federal Agency.

☐ B. I am unable to certify to any of the statements set forth in the certification. I have attached an explanation to this form.

Subscribed and sworn to
Before me this day of

_____ _____
(Date) (Signature)

_____ _____
(Signature of Notary Public) (Typed or Printed Name & Title)

My Commission expires _____
(Date)

CERTIFICATION OF NON-DEBARMENT
FOR FEDERAL GOVERNMENT CONTRACTS
N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

This certification shall be completed, certified to, and submitted to the contracting unit prior to contract award, except for emergency contracts where submission is required prior to payment.

PART I: VENDOR INFORMATION	
Individual or Organization Name	
Physical Address of Individual or Organization	
Unique Entity ID (if applicable)	
CAGE/NCAGE Code (if applicable)	
Check the box that represents the type of business organization:	

☐ Sole Proprietorship (skip Parts III and IV) ☐ Non-Profit Corporation (skip Parts III and IV)

☐ For-Profit Corporation (any type) ☐ Limited Liability Company (LLC) ☐ Partnership

☐ Limited Partnership ☐ Limited Liability Partnership (LLP)

☐ Other (be specific): _____

PART II – CERTIFICATION OF NON-DEBARMENT: Individual or Organization			
I hereby certify that the **individual or organization listed above in Part I** is not debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **City of Vineland** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **City of Vineland of Vineland** to notify the **City of Vineland** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **City of Vineland**, permitting the **City of Vineland** to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning Greater than 50 Percent of Organization	
Section A (Check the Box that applies)	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.
Name of Individual or Organization	
Physical Address	
OR	
☐	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.
Section B (Skip if no Business entity is listed in Section A above)	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization's parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization's parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization's parent entity, as the case may be.
Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity	
Physical Address	
OR	
☐	No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.

Section C – Part III Certification			
I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the **Organization listed above in Part I** or, if applicable, owns greater than 50 percent of a parent entity of _____. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **City of Vineland** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award **City of Vineland** to notify the **City of Vineland** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **City of Vineland**, permitting the **City of Vineland** to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

Part IV – CERTIFICATION OF NON-DEBARMENT: Contractor – Controlled Entities		
Section A		
☐	Below is the name and address of the corporation(s) in which the **Organization listed in Part I** owns more than 50 percent of voting stock, or of the partnership(s) in which the **Organization listed in Part I** owns more than 50 percent interest therein, or of the limited liability company or companies in which the **Organization listed above in Part I** owns more than 50 percent interest therein, as the case may be.	
Name of Business Entity		**Physical Address**
Add additional sheets if necessary		
OR		
☐	The **Organization listed above in Part I** does not own greater than 50 percent of the voting stock in any corporation and does not own greater than 50 percent interest in any partnership or any limited liability company.	

Section B (skip if no business entities are listed in Section A of Part IV)	
☐	Below are the names and addresses of any entities in which an entity listed in Part III A owns greater than 50 percent of the voting stock (corporation) or owns greater than 50 percent interest (partnership or limited liability company).

Name of Business Entity Controlled by Entity Listed in Section A of Part IV	Physical Address

Add additional Sheets if necessary

OR

☐	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.

Section C – Part IV Certification

I hereby certify that the **Organization listed above in Part I** does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **City of Vineland** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **City of Vineland** to notify the **City of Vineland** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **City of Vineland**, permitting the **City of Vineland** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

SAMPLE FORM OF BID BOND

A. We, the undersigned

_____as Principal and
_____as Surety, are hereby held and firmly bound unto
_____in the penal sum of_____Dollars
($_____, lawful money of the United States for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns. Signed this
_____day of_____20_____

B. THE CONDITION of the above obligation is such that whereas the Principal has submitted to the_____,

a certain bid attached hereto and hereby made a part of hereto and hereby made a part of hereof, to enter into a contract in writing for the (insert type of work)

_____

C. NOW THEREFORE:

If said bid shall be rejected, or in the alternate, if said bid shall be accepted and the Principal shall execute and deliver a contract in the form of Agreement required by the Bid Documents and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all respects perform the agreement created by the acceptance of said bid. Then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

D. THE SURETY for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall in no way be impaired or affected by an extensions of the time within the "OBLIGEE" may accept such bid. And said Surety does hereby waive notice of any such extension.

E. IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as corporations have caused their corporate seals to be hereto fixed and these presents to be signed by their proper officers, the day and year set forth above.

_____
PRINCIPAL (L.S.)

_____
SURETY

(SEAL)

_____
BY

NOTE: Bid Bond must be signed by an authorized agent or representative of a surety company and not by the individual or company submitting the bid.

SURETY FORM

The City of Vineland has provided this certificate of surety for submission to a bidder's insurance/bonding company. Language such as this will be accepted; however, language that limits the timeframe in which the City can process claims against a performance bond or language that states the surety is conditional depending on contract terms, will not be accepted. (Contract terms will be as outlined in the bid specifications).

To: Purchasing Board
City of Vineland
640 E. Wood Street
Vineland, NJ 08360

_____
NAME OF INSURANCE/BONDING COMPANY

Being duly qualitied to transact business in the State of New Jersey, hereby certifies and agrees that if:

_____
CONTRACTOR NAME

Is the successful bidder for _____

_____It as surety, will provide the bidder with the bonds as are called for in the bid specifications.

Signed and Sealed _____

_____
NAME OF INSURANCE/BONDING COMPANY

_____ _____
Printed Name of Attorney-in-Fact Signature of Attorney-in-Fact

Power of Attorney for the Attorney-in-Fact must be attached to Consent of Surety and corporate seal of the surety company must be affixed to the Surety form.

Certificate of Surety must be signed by an authorized agent or representative of a surety company and not by the individual or company submitting the bid.

Insurance/Bonding Company to provide the following:

Name: _____ Title: _____

Address: _____

Telephone Number: _____

CITY OF VINELAND

LIST OF SUBCONTRACTORS

(as required by NJSA40A:11-16)

COV BID # 2026-10

ALTERATIONS AT 415 N.W. AVENUE

The following subcontractors are to be used on this project in the four (4) specialty trade categories noted below: These subcontractors must be registered with the Department of Labor's Division of Wage and Hour Compliance (Public Works Contractor Registration) at the time proposals are received.

NOTE: If the project's scope of work does not involve any of the specialty trade categories below, please write the word **"NONE"** in each appropriate space(s).

If the project's scope of work does involve any of the specialty trade categories below, but will be done "in-house" by the General Contractor or a qualified, licensed employee(s), where required, or by such other employee(s) on the contractor's payroll, write the word **"IN-HOUSE"** and provide the names(s) and license number(s), where required, or the name(s) of those employees(s) in each of the appropriate spaces below:

DO NOT LEAVE ANY SPACE BLANK

1. **PLUMBING AND GAS FITTING AND ALL KINDRED WORK:**

   Name: _____

   Address: _____

   License Number: _____

2. **STEAM AND HOT WATER HEATING AND VENTILATING APPARATUS AND ALL KINDRED WORK:**

   Name: _____

   Address: _____

3. **ELECTRICAL WORK:**

Name: _____

Address: _____

4. **STRUCTURAL STEEL AND ORNAMENTAL IRON WORK:**

Name: _____

Address: _____

BY: _____
(SIGNATURE OF AUTHORIZED REPRESENTATIVE)

NAME: _____
(PLEASE PRINT)

DATE: _____

THE ABOVE NAMED SUBCONTRACTORS MUST BE REGISTERED WITH THE DEPARTMENT OF LABOR'S DIVISION OF WAGE AND HOUR COMPLIANCE (PUBLIC WORKS CONTRACTORS REGISTRATION) AT THE TIME PROPOSALS ARE RECEIVED.

BUSINESS REGISTRATION CERTIFICATES MUST BE SUBMITTED, FOR ANY OF THE COMPANIES/INDIVIDUALS LISTED ABOVE AS ONE OF THE FOUR PRIME SUB-CONTRACTORS.