

PROJECT MANUAL for

# KITCHEN IMPROVEMENTS at KIRK MIDDLE SCHOOL

140 BRENNEN DRIVE, NEWARK, DELAWARE 19713

for the

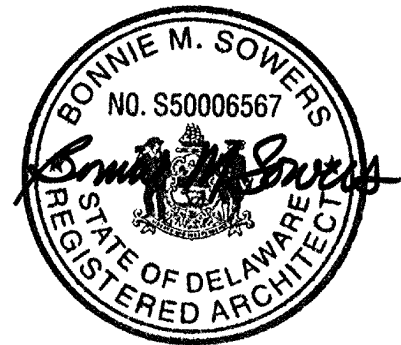
## CHRISTINA SCHOOL DISTRICT

600 NORTH LOMBARD STREET, WILMINGTON, DELAWARE 19801

CSD Project No. 2013-07

EIA Project No. PP7279

January 31, 2013



**EI Associates, P.C.**  
366 East Main Street, Suite 200  
Newark, DE 19711

**Baker, Ingram & Associates**  
366 East Main Street  
Newark, DE 19711

**Advanced Foodservice Solutions**  
424 Hillside Drive  
Mountville, PA 17554

**DEDC Consulting Engineers**  
315 South Chapel Street  
Newark, DE 19711

Architect  
(302) 733-7555 Phone

Structural Engineer  
(302) 456-1757 Phone  
(302) 456-1759 Fax

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Mechanical & Electrical Engineers  
(302) 738-7172 Phone  
(302) 738-7175 Fax

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**CHRISTINA SCHOOL DISTRICT  
KITCHEN IMPROVEMENTS TO KIRK MIDDLE SCHOOL  
140 BRENNEN DRIVE  
NEWARK, DE 19713  
BID NO. 2013-07**

**BID SCHEDULE**

**PROJECT:** Kitchen Improvements to Kirk Middle School

**PRE-BID MEETING:** February 14, 2013 at 2:30 p.m.  
Kirk Middle School  
Main Office  
140 Brennen Drive  
Newark, DE 19713

**BIDS DUE:** March 1, 2013 at 2:00 p.m.  
Christina School District.  
Eden Support Center  
925 Bear-Corbitt Rd.  
Newark, DE 19711

## **INSTRUCTIONS TO BIDDERS**

### **ARTICLE 1 - DOCUMENTS**

- A. Definitions set forth in the Form of Agreement, General Conditions and Division 1 Section "Summary" are applicable to these Instructions to Bidders.
- B. The bidding documents include the Advertisement or Invitation for Bids (if any), the Bid Schedule, Instructions to Bidders, Bid Form (including the Noncollusion Affidavit), Bid Bond Form, Drawings, Specifications, all other proposed Contract Documents and all Addenda issued prior to receipt of Bids.
- C. Complete bidding documents, in PDF electronic copy format on compact disk only, will be available from the Architect at the nonrefundable cost of \$25.00 per set. Hard copy will not be available from the Architect. Please e-mail [bgoas@eiassoc.com](mailto:bgoas@eiassoc.com) to request the form to order bidding documents. Neither the issuing Agency (Owner) nor the Architect assumes responsibility for information derived from incomplete sets of documents. The Agency (Owner) and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.
- D. Bidding documents will be available for review at EI Associates (Newark, DE); Delaware Contractors Association (Newark, DE); Associated Builders and Contractors (New Castle, DE); and through the following on-line services: Reed Construction Data; McGraw-Hill Construction Dodge; Construction Journal; CDC News/Bidtool; iSqFt Construction Software; and The Blue Book Network.
- E. Bidder(s) with whom the Owner shall enter into a contract shall receive, without charge, the number of sets of Contract Documents stipulated in the General Conditions.
- F. Questions regarding the bidding documents may be directed during the bidding period, preferably by e-mail, to the Architect's office as follows:

Contact: Mr. Arlan Hollinger  
EI Associates  
2001 North Front Street, Building 3  
Harrisburg, PA 17102

Email: [ahollinger@eiassoc.com](mailto:ahollinger@eiassoc.com)  
Telephone: 717-233-4556, ext. 1004

### **ARTICLE 2 - SITE LOCATION**

- A. The Project site is located at the existing Kirk Middle School, 140 Brennen Drive, Newark, New Castle County, Delaware.

### **ARTICLE 3 – BIDDER’S REPRESENTATIONS**

- A. Pre-Bid Meeting: A pre-bid meeting for this project will be held at the time and place designated. Attendance at this meeting is a prerequisite for submitting a Bid, unless this requirement is specifically waived elsewhere in the Bid Documents.

B. By submitting a Bid, the Bidder represents that:

1. The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.
2. The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.
3. The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

C. Joint Venture Requirements:

1. For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.
2. Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.
3. All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.
4. All required insurance certificates shall name both Joint Venturers.
5. Both Joint Venturers shall sign the Bid Form and shall submit a valid Delaware Business License Number with their Bid or shall state that the process of application for a Delaware Business License has been initiated.
6. Both Joint Venturers shall include their Federal E.I. Number with the Bid.
7. In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.
8. Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the Owner.

D. Assignment of Antitrust Claims: As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

#### ARTICLE 4 - EXAMINATION OF DOCUMENTS AND SITE

A. Each bidder shall carefully examine all bidding documents and materials pertinent thereto, so that bidder may be completely aware and satisfied as to the character, quality, and quantities of work, materials, and services required in the performance of the work of the Contract.

1. Unless otherwise noted, references in the documents to "Engineer" shall mean the "Architect and the Architect's consulting engineer."

B. Each bidder shall visit the site of the proposed work and shall be responsible to observe and ascertain, to bidder's satisfaction, all local conditions that may be encountered or affect the performance of the work. Bidders shall, likewise, familiarize themselves, to the extent possible, with labor conditions and practices of local code enforcement officials that may affect or influence the performance of the work.

1. Other than the Prebid Conference, visits to the project site must be scheduled with Owner in advance by contacting Mr. Nicholas Vacirca, Capital Projects Manager for Christina

School District, at telephone number (302) 454-2400, ext. 209; or by e-mail at [vacircan@christina.k12.de.us](mailto:vacircan@christina.k12.de.us).

2. When arriving at the Project site, all visitors are required to comply with sign-in and identification procedures established by the School District.
- C. Subsurface Information: For any excavation work, Bidders/Contractors shall be responsible to make their own investigations, evaluations, assumptions and determinations of existing subsurface conditions of the site, the nature and character of materials to be encountered in the work, and the types and sizes of equipment required to perform the Work.
1. Excavation is to be performed on an UNCLASSIFIED basis.
- D. Additional information regarding existing conditions is available on drawings from previous construction work for the building. Such drawings, which are neither part of the Bidding Documents nor the Contract Documents, may be examined by bidders at the Architect's office or at Owner's Facilities office (contact as in Paragraph B.1 above). The information represented in such documents, and the conclusions and inferences that may be found in or inferred from such information, is not warranted by Owner or Architect as either accurate or complete. Bidders shall determine for themselves the reliability of such drawings by verification at the site in accordance with Paragraph B above.
- E. Each bidder, by submission of a bid, represents that the bidder has visited and familiarized itself with the site and existing facility in accordance with the preceding paragraphs, that it has read the bidding documents and understands their full character and intent, that the bid is based upon the materials, equipment and systems set forth in the bidding documents without exception, and that it has otherwise complied with the provisions of this Article. Should the Owner subsequently accept the bidder's bid, no claims, allowances, or concessions shall be made, accepted, or recognized by the Owner, at any future time, for any additional labor, equipment, or materials required, or for any difficulties encountered in the work, or, for the lack of any information that could have been foreseen, apparent, or ascertained had the bidder so complied with this Article 4.
- F. Bidders are cautioned that in the reproduction of the bidding documents the noted drawing scales may be altered and, therefore, not to rely on scaling of the Drawings for take-offs without verifying that the indicated scales are accurate by comparison to the noted dimensions or to actual dimensions obtained by site visit and field verification. No claims, allowances, or concessions shall be made, accepted, or recognized by the Owner, at any future time, for additional labor, equipment, or materials required, or for difficulties encountered in the work, resulting from scaling of the Drawings.

#### ARTICLE 5 - PREPARATION OF BIDS

- A. The Form of Bid and forms for supplemental documents bound herewith are for reference only and shall not be detached or executed by the bidder.
- B. Bids shall be prepared and submitted on exact copies of the forms herein bound. If amended, use copies of those forms or the parts thereof issued by addenda. Bids must be typewritten or written with ink.
- C. Bids shall be prepared and submitted in **DUPLICATE**. Each such bid shall include the following, in accordance with these Instructions to Bidders:
  1. One signed original Form of Bid, one signed original bid security, and one signed original of each other supplemental bid document.

2. One copy of the completed original bid (Bid Form, bid security and other supplemental bid documents), which may be photocopies or additional signed originals.
- D. Blank spaces in the Form of Bid shall be completed in their entirety.
  - E. Bids must be based on the Work indicated in the bidding documents, which may include (1) comparable products where allowed without consideration as substitutions or (2) substitute products that are considered and accepted by the Architect as indicated in addenda prior to the Bid opening date. During bidding, substitutions will be permitted only by the procedures set forth in Article 13 "Product Substitutions" of these Instructions to Bidders.
  - F. Where called for, bidder shall state the monetary amount of the proposed Base Bid in both words and figures. In the event of discrepancy between words and figures of a stated amount, the amount stated in words shall govern.
  - G. Where called for, bidder shall state amounts for **Alternates** for which the bid is being submitted. Bidder agrees that such amounts will represent full compensation for those items or units of Alternate work indicated for additions to or deductions from the Base Bid work.
    1. Refer to instructions for Alternates on the Form of Bid and to the administrative and procedural requirements in Division 1 Section "Alternates," if used.
    2. If there is no change in the Base Bid for an Alternate, enter "No Change".
    3. Refer to Article 9 for information on award of contract. Failure to fill out the Form of Bid properly in regard to alternates may result in rejection of the Bid.
  - H. Where called for, bidder shall state amounts for **Unit Price**. Bidder agrees that such amounts will represent full compensation for those items or units of work indicated for additions to or deductions from the Base Bid work, or, if so indicated, work of an Alternate Bid. The Owner reserves the right to refuse or not use any or all Unit Prices that Owner considers unreasonable or unbalanced.
    1. Refer to instructions for Unit Prices on the Form of Bid and to the administrative and procedural requirements in Division 1 Section "Unit Prices and Quantity Allowances," if used.
  - I. Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give 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 agent's authority to bind the Bidder.
  - J. Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.
  - K. In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.
  - L. Any bid that contains omissions, additions, deductions not called for, conditional or uninvited alternate bids, recapitulation of the work to be performed, obviously unbalanced prices, alterations of forms, failure to include an executed non-collusion affidavit, or other irregularities of any kind, or, is not based on the documents as called for herein, or, though otherwise proper in form, is not accompanied by the bid security as set forth in Article 8 "Bid Security," may be rejected by the Owner as being invalid.

- M. Interlineations, erasures, alterations, or changes made by the bidder in preparation of the bid shall be explained or appropriately noted over the signature of the bidder.

#### ARTICLE 6 - IDENTIFICATION AND SUBMISSION OF BIDS

- A. Bids, accompanied by the required supplemental bid documents, shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to and delivered to the Owner by the time and date set forth in the Bid Schedule.
1. Sealed bids shall be addressed to the Christina School District, Eden Support Center, 925 Bear-Corbitt Rd. Bear, DE 19701, Attn: Nick Vacirca. The outer envelope should clearly indicate: "**Kirk Middle School Kitchen Improvements, CHR1307-KMSKITIMPR-SEALED BID - DO NOT OPEN**," followed by the name and address of the Bidder and the date and time of bid opening.
- B. If the Bid is sent by mail, UPS, FedEx or similar form of delivery, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof.
- C. Location(s) of Bid Receipt & Bid Opening: As indicated in the Bid Schedule and/or Advertisement for Bids.
- D. Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Bid Schedule and/or Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned. Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.
- E. No responsibility shall be attached to, or assumed by, anyone for the premature opening of any bid improperly identified or improperly submitted.
- F. Bids submitted by any method other than on the Form of Bid, as set forth in Article 5 "Preparation of Bids," will not be considered or accepted by the Owner.
- G. Oral, telephonic, faxed, e-mailed, telexed or telegraphic Bids are invalid and will not be considered or accepted by the Owner.
- H. Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

#### ARTICLE 7 – WITHDRAWAL OR MODIFICATION OF BIDS

- A. Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architect. A request for withdraw by letter or fax, if the Architect is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.
- B. Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.

- C. A Bid may not be modified, withdrawn or canceled by the Bidder during a **thirty (30) day** period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for **30 days** after the date of the Bid opening.

#### ARTICLE 8 - BID SECURITY

- A. Each bid must be accompanied by a bid security in an amount not less than ten percent (10%) of the Base Bid plus all add alternates. Bid security shall be in the form of a bid bond or certified check, bank cashier's check, money order, or other prior approved secured deposit assigned to the Owner as payee or obligee, as applicable. The Owner has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed and bonds have been furnished or the specified time has elapsed so the Bids may be withdrawn or all Bids have been rejected.
1. A bid bond need not be for a specific sum, but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be in the form bound herewith, accompanied by a certified and current power of attorney evidencing the authority of the agent of the surety to execute the Bid Bond. The Surety shall be licensed and qualified to do business in the State of Delaware. The form of Bid Bond herein bound is for reference only and shall not be detached, but may be copied for bidder's use.
- B. The bid security shall warrant that the bidder, upon receipt of written notice from the Owner that such bidder is the apparent successful bidder, shall furnish to the Owner within the time period(s) specified a properly executed Agreement, properly executed Performance and Payment Bonds in the forms herein provided, and evidence of pertinent insurance coverage, in accordance with the applicable provisions of the Contract Documents. If successful bidder fails to comply with the foregoing requirements, the Owner may declare said bidder to be in default.
- C. The Owner shall not be liable for any interest upon any bid security submitted, which is in the form of a check, for the entire guarantee period.

#### ARTICLE 9 - CONSIDERATION OF BIDS

- A. Opening / Rejection of Bids:
1. Unless otherwise stated, Bids received on time will be publicly opened and read aloud. An abstract of the Bids will be made available to Bidders.
  2. The Owner shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.
  3. If the Bids are rejected, it will be done within thirty (30) calendar days of the Bid opening.
- B. Comparison of Bids:
1. After the Bids have been opened and read, the bid prices will be compared and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Owner shall have the right to accept Alternates in any order or combination.
  2. The Owner reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Owner or its agent(s), it is in the Owner's best interest.

3. An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.
4. The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.
5. No qualifying letter or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

C. Disqualification of Bidders:

1. The Owner will determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:
  - a. The Bidder's financial, physical, personnel or other resources including Subcontracts;
  - b. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state;
  - c. The Bidder's written safety plan;
  - d. Whether the Bidder is qualified legally to contract with the State;
  - e. Whether the Bidder supplied all necessary information concerning its responsibility; and,
  - f. Any other specific criteria for a particular procurement, which an agency may establish; provided however, that, the criteria be set forth in the Invitation to Bid and is otherwise in conformity with State and/or Federal law.
2. If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of the determination shall be sent to the affected Bidder within **five (5) working days** of said determination.
3. In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.
  - a. More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.
  - b. Evidence of collusion among Bidders.
  - c. Unsatisfactory performance record as evidenced by past experience.
  - d. If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.
  - e. If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.
  - f. If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.
  - g. If any exceptions or qualifications of the Bid are noted on the Bid Form.

D. Acceptance of Bid and Award of Contract:

1. Each Bid on any Public Works Contract must be deemed responsive by the Owner to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents.
2. The Owner shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.

3. Per Section 6962(d)(13) a., Title 29, Delaware Code, “The contracting agency shall award any public works contract within **thirty (30) days** of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid.”
4. The successful bidder to whom the Owner intends to make an award of contract will receive written Notice of Intent to Award, from the Owner or the Owner's agent. Such notice will be directed to the successful bidder at the address appearing in bidder's bid.
5. A formal Contract shall be executed with the successful Bidder within **twenty (20) calendar days** after the award of the Contract. The Agreement, the Performance Bond, and the Payment Bond shall each be executed by the successful bidder and delivered to the Owner in at least five (5) counterparts. The forms of Agreement, Performance Bond, and Payment Bond bound in the Project Manual are for reference only and shall not be detached. Separate and original copies of the form of Agreement, Performance Bond, and Payment Bond will be prepared and furnished to the successful Bidder by the Architect.
6. The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds in accordance with Article 11 below and the Supplementary Conditions, within **twenty (20) days** of official notice of contract award. Bonds shall be for the benefit of the Owner with surety in the amount of 100% of the total Contract Award. Said Bonds shall be conditioned upon the faithful performance of the Contract. Bonds shall remain in effect for the period of one year after the date of substantial completion.
7. If the successful Bidder fails to execute the required Contract and Bond, as aforesaid, within **twenty (20) calendar days** after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Owner as liquidated damages, and not as a forfeiture or as a penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.
8. Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) or a Delaware business license number, and should the bidder be awarded a contract, such bidder shall provide to the agency the taxpayer identification or Delaware business license numbers of its subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. Prior to execution of the resulting contract, the successful Bidder shall be required to produce proof of its Delaware business license if not provided in its bid.
9. The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within **thirty (30) calendar days** after the opening of the Bids.

#### ARTICLE 10 – POST-BID INFORMATION

- A. Before making an award, the Owner may require a bidder to present satisfactory evidence, in the form specified by the Owner, of bidder's experience, qualifications, financial condition, and other matters reasonably related to bidder's ability to satisfactorily perform and complete the work covered by bidder's bid.
  1. Contractor's Qualification Statement: Bidders to whom award of a Contract is under consideration shall, if requested by the Owner, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

2. Business Designation Form: Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.
- B. Prior to Award of Contract, in order to facilitate the Architect's and Owner's review of Base Bid and/or Alternate Bid products or services, bidders and/or manufacturer(s) shall, upon Architect's request and direction, submit to the Architect or Owner samples and product data illustrating and describing in detail the proposed products or services. Additionally, upon request, a list of at least five similar projects that have been completed with the proposed products or services, with current contact names and phone numbers, shall be submitted. After review, the data will be retained by Owner and samples shall be retrieved by manufacturer's representative.

#### ARTICLE 11 – PERFORMANCE BOND AND PAYMENT BOND

- A. The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.
- B. If the Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provide in the Contract Documents.
- C. The Performance and Payment Bond forms used shall be the standard OMB forms (attached).
- D. The bonds shall be dated on or after the date of the Contract.
- E. The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

#### ARTICLE 12 - CHANGES PRIOR TO OPENING OF BIDS

- A. During the period allowed for the preparation of bids, the Architect may furnish to prospective bidders written Addenda that modify or interpret the bidding documents by additions, deletions, clarifications, or corrections. Except for portions otherwise stipulated, such Addenda will become a part of the Contract Documents.
  1. Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of the Bidding Documents. Generally, addenda will be transmitted by e-mail.
  2. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
  3. No Addenda will be issued later than **4 days** prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.
- B. Each bidder shall consider such modifications, or interpretation contained therein, in the computation of amounts to be inserted by the bidder in its bid.
- C. Each prospective bidder shall ascertain what Addenda, if any, have been promulgated by the Architect that may affect the work to be covered in bidder's bid. Failure of any bidder to receive any Addenda so promulgated shall not relieve such bidder from the obligation to perform any work indicated in such Addenda as a part of bidder's work and bid at no additional cost to Owner. Bidders shall acknowledge receipt of such Addenda in the Form of Bid, but failure to do so shall not relieve such bidder from the obligation to perform any work indicated in such Addenda, not acknowledged, as a part of bidder's work and bid at no additional cost to Owner.

- D. Bidders who discover errors, omissions, discrepancies, or ambiguities in the bidding documents shall be reported to the Architect immediately. Submit a written request to the Architect for an interpretation or correction thereof; such request shall be delivered to the Architect at least **seven (7) days** prior to bid opening date. Interpretations or corrections will be made only by written Addenda promulgated by the Architect. Interpretations or corrections communicated to bidders by any other method shall be neither binding nor reliable.
- E. Inquiries concerning the work, bidding procedures or the bidding documents, shall be directed to the Architect. Refer questions to contact person noted in Article 1, Paragraph F, in these Instructions to Bidders.
- F. The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.

#### ARTICLE 13 – PRODUCT SUBSTITUTIONS

- A. The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Vendor certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.
  - 1. The terms, “manufacturers, brands, products, materials, equipment, assemblies, systems, or methods of construction,” are included in the term “product” when considering product options and substitutions.
- B. Requests for substitutions shall be made in writing to the Architect at least **ten (10) days** prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due to the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect’s decision of approval or disapproval shall be final. The Architect is to notify Owner prior to any approvals.
- C. If the Architect approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.
  - 1. Requests for substitution shall be submitted in writing (or as a PDF e-mail attachment < 6MB) by a **prime bidder** and must be accompanied by, and have affixed thereto, a Substitution Submission Form, included in the Project Manual with the Miscellaneous Forms. The Form shall be completed and signed by a responsible representative of the manufacturer, subcontractor or supplier, as appropriate, of each proposed substitute item.  
NOTE: The Substitution Submission Form is not the written request for substitution, but is merely a certification to be properly signed and attached to the prime bidder's written request.
- D. The Architect shall have no obligation to consider any substitutions after the Contract award.
- E. Refer also to Supplementary Conditions, Article 20 “Product Options.”

ARTICLE 14 - SUBCONTRACTORS

- A. As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form and as agreed upon at the Pre-Bid Meeting. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.
1. Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.
  2. It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.
- B. Refer also to General Conditions, Article 11. For subcontract categories not included on the Bid Form, and within **seven (7) days** after final Award of Contract, the Contractor shall submit to the Architect an additional list naming the proposed subcontractors for all other principal portions of the Work, including items or portions of Work specifically requested by the Architect to be listed.
- C. Subcontractors listed shall be firms of good professional reputation, regularly engaged in the branch of Work for which they are listed. Owner and Architect reserve the right to request qualification data of any proposed subcontractor.
- D. The term subcontractor, in this instance, may also mean a major supplier of any item of work so listed, from whom the Contractor proposes to purchase items for erection or installation by its own forces.
- E. Subcontractors listed shall be subject to the discretionary review of the Architect and Owner. Should the Architect or Owner raise reasonable and timely objection to any subcontractor, the Contractor shall submit an acceptable substitute. The lack of objection by the Owner or Architect to a proposed subcontractor shall not constitute approval of any product or workmanship, or, in the event of eventual disapproval of a subcontractor's product or workmanship, valid reason for an increase in the Contract Sum or Time.
- F. The subcontractors listed shall be those employed in the Work unless reasonable objection has been raised. No change of any subcontractor will be permitted thereafter, except as provided in the General Conditions.

ARTICLE 15 - INABILITY TO CONSUMMATE FINANCING OR TO PROCEED

- A. It is expressly understood and agreed to by each bidder that, notwithstanding any other provision of the Contract Documents, the Owner may at any time cancel any award made by it, or cancel any contract entered into with any bidder, without liability to the bidder, at any time before the bidder has been given written notice to proceed and has actually begun Work under the Contract, if financing satisfactory to the Owner cannot reasonably be consummated as contemplated.

ARTICLE 16 - TIME OF COMPLETION

- A. The work of this Project, and designated portions thereof, shall be completed within the time specified in Section 2.3 of the Form of Agreement (AIA Document A107-2007) and in accordance with General Conditions, Article 14 "Time."
- B. Date specified for Time of Completion in the Form of Agreement is premised on issuing the Notice to Proceed and making the site available for start of construction as indicated in Section 011000 "Summary," Article "Construction Schedule." If such anticipated dates for Notice to Proceed and site availability are delayed, the Contractor shall comply with provisions in the General Conditions for requesting a change in the Contract Time, and an equitable adjustment in the Contract Time will be made after due consideration. No claim for a change in the Contract Sum due to delay in issuance of Notice to Proceed or site availability will be considered.

ARTICLE 17 - LIQUIDATED DAMAGES

- A. Should the Contractor fail to complete the Work of its Contract, or any designated portion thereof, on or before the date(s) specified for Time of Completion referenced in the preceding Article, the Contractor shall be liable for Liquidated Damages for each such date missed in accordance with the Supplementary Conditions, Article 7 "Liquidated Damages."

ARTICLE 18 - SUPPLEMENTAL CONTRACT REQUIREMENTS

- A. Reference shall be made to the General Conditions or Supplementary Conditions bound herewith for the following conditions or regulations to which this Contract is subject and which shall be a part thereof:
  - 1. Prevailing Wage Requirements.
  - 2. Equality of Employment Opportunity on Public Works.
  - 3. Contractor's Insurance

# BID FORM

**To:** Christina School District  
Eden Support Center  
925 Bear-Corbitt Road  
Bear, DE 19701

(Other License Nos.): \_\_\_\_\_

**Phone No.:** (        ) \_\_\_\_\_ - \_\_\_\_\_      **Fax No.:** (        ) \_\_\_\_\_ - \_\_\_\_\_

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

\$ \_\_\_\_\_  
(\$ \_\_\_\_\_)

## ALTERNATES

Alternate prices conform to applicable project specification sections. Refer to specifications, including Section 012300 "Alternates" (if used), for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

ALTERNATE No. 1: Increase Size of Addition for Storage Room

Add/Deduct: \_\_\_\_\_  
(\$ \_\_\_\_\_)

**CHRISTINA SCHOOL DISTRICT  
KITCHEN IMPROVEMENTS TO KIRK MIDDLE SCHOOL  
140 BRENNEN DRIVE  
NEWARK, DE 19713  
BID NO. 2013-07**

**BID FORM**

**UNIT PRICES**

Unit prices conform to applicable project specification sections. Refer to the specifications, including Section 012200 "Unit Prices and Quantity Allowances" (if used), for a complete description of the following Unit Prices:

**ADD**

**DEDUCT**

None required.

**CHRISTINA SCHOOL DISTRICT  
KITCHEN IMPROVEMENTS TO KIRK MIDDLE SCHOOL  
140 BRENNEN DRIVE  
NEWARK, DE 19713  
BID NO. 2013-07**

**BID FORM**

I/We acknowledge Addendums numbered \_\_\_\_\_ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for sixty (60) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work by the date stipulated in Section 2.3 of the draft Form of Agreement (AIA Document A107) included in the Project Manual, based on a Notice to Proceed being issued no later than April 9, 2013.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By \_\_\_\_\_ Trading as \_\_\_\_\_  
(Individual's / General Partner's / Corporate Name)

\_\_\_\_\_  
(State of Corporation)

Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Witness: \_\_\_\_\_ By: \_\_\_\_\_  
(SEAL) ( Authorized Signature )

\_\_\_\_\_  
( Title )

Date: \_\_\_\_\_

**ATTACHMENTS**

Sub-Contractor List  
Non-Collusion Statement  
Bid Security  
(Others as Required by Project Manuals)

**CHRISTINA SCHOOL DISTRICT  
KITCHEN IMPROVEMENTS TO KIRK MIDDLE SCHOOL  
140 BRENNEN DRIVE  
NEWARK, DE 19713  
BID NO. 2013-07**

**BID FORM**

**SUBCONTRACTOR LIST**

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

<b><u>Subcontractor Category</u></b>	<b><u>Subcontractor</u></b>	<b><u>Address (City &amp; State)</u></b>	<b><u>Subcontractors tax payer ID # or Delaware Business license #</u></b>
1. Foodservice Equipment	<hr/>	<hr/>	<hr/>
2. Plumbing	<hr/>	<hr/>	<hr/>
3. HVAC	<hr/>	<hr/>	<hr/>
4. Electrical	<hr/>	<hr/>	<hr/>
5.	<hr/>	<hr/>	<hr/>
6.	<hr/>	<hr/>	<hr/>
7.	<hr/>	<hr/>	<hr/>

**CHRISTINA SCHOOL DISTRICT  
KITCHEN IMPROVEMENTS TO KIRK MIDDLE SCHOOL  
140 BRENNEN DRIVE  
NEWARK, DE 19713  
BID NO. 2013-07**

**BID FORM**

**NON-COLLUSION STATEMENT**

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to Christina School District.

All the terms and conditions of CSD Project # CSD-2013-07 have been thoroughly examined and are understood.

**NAME OF BIDDER:** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE  
(TYPED):** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE  
(SIGNATURE):** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**ADDRESS OF BIDDER:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**E-MAIL:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_. NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

10% BOND TO ACCOMPANY PROPOSAL  
(NOT NECESSARY IF CERTIFIED CHECK IS USED)

KNOW ALL MEN BY THESE PRESENTS That \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_ of the County of

\_\_\_\_\_ and State of \_\_\_\_\_ principal, and \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_ of the County of

\_\_\_\_\_ Unto the Christina School District in the sum of \_\_\_\_\_

Dollars or \_\_\_\_\_ per cent (not to exceed \_\_\_\_\_ Dollars) of amount bid on

Contract No. \_\_\_\_\_ to be paid to said Christina School District for the use and benefit of the Christina School District, for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole, firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bounden principal who has submitted to the Christina School District, a certain proposal to enter into a certain contract to be known as Contract No. \_\_\_\_\_, for the furnishing of certain products and/or services within the said State of Delaware shall be awarded this contract, and if said Principal shall well and truly enter into and execute this Contract and furnish therewith such surety bond as may be required by the terms of said contract and approved by the Christina School District, said contract and said bond to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation to be void or else to be and remain in full force and virtue.

Sealed with \_\_\_\_\_ seal and dated this \_\_\_\_\_ day of \_\_\_\_\_

In the year of our Lord two thousand and \_\_\_\_\_ (20\_\_\_\_).

SEALED AND DELIVERED IN THE  
Presence Of

\_\_\_\_\_  
Name of Bidder (Principal)

Corporate  
Seal

By: \_\_\_\_\_  
Authorized Signature

Attest: \_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Surety

Corporate  
Seal

Witness: \_\_\_\_\_

By: \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

# DRAFT AIA<sup>®</sup> Document A107<sup>™</sup> - 2007

## Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope

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)

«[Christina School District](#)»« \_\_\_\_ »  
«[Drew Education Support Center](#)  
[600 North Lombard Street,](#)  
[Wilmington, DE 19801](#)»  
«[Telephone Number: \(302\) 552-2600](#)»  
«[Fax Number: \(302\) 429-4109](#)»

and the Contractor:

(Name, legal status, address and other information)

« \_\_\_\_ »  
« \_\_\_\_ »  
« \_\_\_\_ »  
« \_\_\_\_ »

for the following Project:

(Name, location and detailed description)

«[Kitchen Improvements at Kirk Middle School](#) »  
«[140 Brennen Drive](#)  
[Newark, DE 19713](#)»  
« \_\_\_\_ »

The Architect:

(Name, legal status, address and other information)

«[EI Associates](#)»«[, P.C.](#)»  
«[366 East Main Street, Suite 200](#)  
[Newark, DE 19711](#)»  
«[Telephone Number: \(302\) 733-7555](#)»  
«[Fax Number: \(717\) 236-8256](#)»

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

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

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

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### ARTICLE 1 THE WORK OF THIS CONTRACT

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

### ARTICLE 2 DATES OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

*(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)*

«The date of commencement shall be the date of issuance of the Notice to Proceed unless a different date for commencement is fixed in the Notice to Proceed.»

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

§ 2.3 The Contractor shall achieve Substantial Completion of the entire Work not later than << >> (<< >>) days from the date of commencement, or as follows: the following dates:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

<< >>

Portion of Work

Entire Work

Entire Work.

Substantial Completion Date

Substantial Completion by August 1, 2013.

Final Completion by August 15, 2013.

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

<< Liquidated Damages: Refer to Supplementary Conditions Article 7.->>

### ARTICLE 3 CONTRACT SUM

§ 3.1 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 one of the following:

(Check the appropriate box.)

[ X ] Stipulated Sum, in accordance with Section 3.2 below

[ << >> ] Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

[ << >> ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be << >> (\$ << >> ), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

<< >>

§ 3.2.2 Unit prices, if any:

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

Item

Units and Limitations

Price Per Unit (\$ 0.00)

§ 3.2.3 Allowances included in the stipulated sum, if any:  
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Allowance

§ 3.3 ~~COST OF THE WORK PLUS CONTRACTOR'S FEE~~ (Intentionally Omitted)

§ 3.3.1 ~~The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.~~

§ 3.3.2 ~~The Contractor's Fee:~~

~~(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)~~

<< >>

§ 3.4 ~~COST OF THE WORK PLUS CONTRACTOR'S FEE WITH A GUARANTEED MAXIMUM PRICE~~ (Intentionally Omitted)

§ 3.4.1 ~~The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.~~

§ 3.4.2 ~~The Contractor's Fee:~~

~~(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)~~

<< >>

§ 3.4.3 ~~GUARANTEED MAXIMUM PRICE~~

§ 3.4.3.1 ~~The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed « » (\$ « »), subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.~~

~~(Insert specific provisions if the Contractor is to participate in any savings.)~~

<< >>

§ 3.4.3.2 ~~The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:~~

<< >>

§ 3.4.3.3 ~~Unit Prices, if any:~~

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

Item	Units and Limitations	Price Per Unit (\$ 0.00)

§ 3.4.3.4 ~~Allowances included in the Guaranteed Maximum Price, if any:~~

~~(Identify and state the amounts of any allowances, and state whether they include labor, materials, or both.)~~

Item	Allowance

§ 3.4.3.5 ~~Assumptions, if any, on which the Guaranteed Maximum Price is based:~~

<< >>

## ARTICLE 4 PAYMENTS

### § 4.1 PROGRESS PAYMENTS

§ 4.1.1 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.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 4.1.3 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 certified amount to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than « » ( « » ) days after the Architect receives the Application for Payment. After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

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

§ 4.1.4 Retainage, if any, shall be withheld as follows:

«Five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage may become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.»

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest as follows: 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.)*

«Per Section 6516, Title 29 of the Delaware Code, annualized interest is not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice. Accordingly, payments shall bear interest from 30 days after presentment by the Architect to the Owner of the authorized Certificate of Payment at the annual rate of 12% or 1% per month. » « »

### § 4.2 FINAL PAYMENT

§ 4.2.1 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 Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the contractor has submitted a payment application with a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a guaranteed maximum price; and
- .3 a final Certificate for Payment has been issued by the Architect.

§ 4.2.2 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:

« »

## ARTICLE 5 DISPUTE RESOLUTION

### § 5.1 BINDING DISPUTE RESOLUTION

For any claim subject to, but not resolved by, mediation pursuant to Section 21.3, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.)

☐ Arbitration pursuant to Section 21.4 of this Agreement

☒ Litigation in a court of competent jurisdiction

☐ Other (Specify)

<< >>

## ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A107–2007, Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope.

§ 6.1.2 The Supplementary and other Conditions of the Contract are those contained in the Project Manual, dated January 31, 2013, and are as follows:

Document	Title	Date	Pages
	<u>Supplementary Conditions</u>		<u>SC-1 thru SC-18</u>

§ 6.1.3 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

«Specifications are listed in the Table of Contents of the Project Manual, dated January 31, 2013, and include additions and deletions (if any) made by addenda.»

Section	Title	Date	Pages

§ 6.1.4 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

«Drawings are listed on the Cover Sheet of the Drawings, dated January 31, 2013, and include additions and deletions (if any) made by addenda.»

Number	Title	Date

§ 6.1.5 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are enumerated in this Article 6.

§ 6.1.6 Additional documents, if any, forming part of the Contract Documents:

- Exhibit A, Determination of the Cost of the Work, if applicable.
- AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:

<< >>

.3 Other documents:

*(List here any additional documents that are intended to form part of the Contract Documents.)*

«[Advertisement for Bid;](#)  
[Instructions to Bidders;](#)  
[Sample Forms;](#)  
[the Bid Form;](#)  
[the Contractor's completed Bid;](#)  
[the Award Letter;](#)  
[Prevailing Minimum Wage Rate Determination; and](#)  
[Performance and Payment Bonds](#) »

## ARTICLE 7 GENERAL PROVISIONS

### § 7.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. The 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 to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

### § 7.2 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 between any persons or entities other than the Owner and the Contractor.

### § 7.3 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.

### § 7.4 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.

### § 7.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 7.5.1 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 will retain all common-law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment 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 this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them 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 material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 7.5.3 The Contractor will be furnished, free of charge, one (1) set of Contract Drawings and Specifications, plus one set in PDF format on compact disk. Additional copies will be provided, at Contractor's request and upon payment by Contractor of Architect's cost of reproduction and handling.

§ 7.5.4 © EI Associates. The unauthorized use, duplication or adaptation of Drawings, Specifications or any other Contract Document, not otherwise bearing a copyright, or any information contained therein without the express written permission of EI Associates constitutes a violation of law and shall entitle EI Associates to all available legal remedies, including but not limited to those specified in the Architectural Works Copyright Protection Act.

## § 7.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmission, unless otherwise provided in the Agreement or in the Contract Documents.

## ARTICLE 8 OWNER

### § 8.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 8.1.1 The Owner shall furnish all necessary surveys and a legal description of the site. (Intentionally omitted.)

§ 8.1.2 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. The Contractor, at its expense shall bear the costs to accurately identify the location of all underground utilities in the areas of its excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities.

§ 8.1.3 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

### § 8.2 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the 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 is 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.

### § 8.3 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~~three-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner, without prejudice to any other remedy the Owner may have, may correct such deficiencies with its own forces or with a separately engaged contractor, and may deduct the reasonable cost thereof, including Owner's expenses and compensation for the Architect's services made necessary thereby, from the payment then or thereafter due the Contractor. Contractor agrees that the Owner's action or inaction with regard to Owner's right to carry out the Work in accordance with this paragraph will not constitute any basis for a delay claim by Contractor.

## ARTICLE 9 CONTRACTOR

### § 9.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 9.1.1 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.

§ 9.1.2 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 8.1.1, 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.

§ 9.1.3 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.

## § 9.2 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 9.2.1 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, unless the Contract Documents give other specific instructions concerning these matters.

§ 9.2.2 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.

§ 9.2.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect.

§ 9.2.3 The Contractor's representative shall not be changed without ten days written notice to the Owner.

## § 9.3 LABOR AND MATERIALS

§ 9.3.1 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.

§ 9.3.2 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 skilled in tasks assigned to them.

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

## § 9.4 WARRANTY

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 under normal usage. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.

§ 9.4.1 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of guarantee.

§ 9.4.2 Defects appearing during the period of guarantee will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of guarantee will have elapsed.

§ 9.4.3 In addition to the General Guarantee there are other guarantees required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said guarantees will commence at the same time as the General Guarantee.

§ 9.4.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

#### § 9.5 TAXES

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

#### § 9.6 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 9.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as 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.

§ 9.6.1.1 The Owner will bear the costs for all impact and user fees associated with the project.

§ 9.6.2 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. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith. 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.

#### § 9.6.3 State License and Tax Requirements:

§ 9.6.3.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the Delaware Department of Finance within ten (10) days after entering into any contract with a contractor or subcontractor not a resident of this State, a statement of total value of such contract or contracts together with the names and addresses of the contracting parties.

§ 9.6.3.2 The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.

#### § 9.7 ALLOWANCES

The Contractor shall include in the Contract Sum all allowances (if any) stated in the Contract Documents. The Owner shall select materials and equipment under cash allowances with reasonable promptness. Cash Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Cash Allowance amounts shall not include the Contractor's costs for unloading and handling at the site, labor, installation, overhead, and profit.

#### § 9.8 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

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

## § 9.9 SUBMITTALS

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. 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. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

## § 9.10 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.

## § 9.11 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. The Contractor shall coordinate the work of the various trades involved.

## § 9.12 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. Perform clean-up daily. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus material from and about the Project. The Contractor shall be responsible for returning all damaged areas to their original conditions.

## § 9.13 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 indemnify and hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such 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 the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

## § 9.14 ACCESS TO WORK

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

## § 9.15 INDEMNIFICATION

§ 9.15.1 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 which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 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 9.15.1 shall not be limited by a limitation on amount or type of damages,

compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

## ARTICLE 10 ARCHITECT

§ 10.1 The Architect will provide administration of the Contract 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, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 The Architect will visit the site at intervals appropriate to the stage of the construction 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 safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.2.1 There will be no full-time project representative provided by the Owner or Architect on this project.

§ 10.3 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 report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) 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.

§ 10.4 Based on the Architect's evaluations of the Work and 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.

§ 10.5 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.6 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 with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review.

§ 10.7 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 will make initial decisions on all claims, disputes and other matters in question between the Owner and Contractor but ~~will not be liable for~~ results of any interpretations or decisions rendered in good faith.

§ 10.8 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents and in compliance with all local requirements.

§ 10.9 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.

## ARTICLE 11 SUBCONTRACTORS

§ 11.1 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.

§ 11.2 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of the Subcontractors or suppliers for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. ~~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. 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, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.~~ The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.2.1 Unless otherwise permitted by the Architect, the list of Subcontractors shall be prepared on blank copies of the "Subcontractors and Major Materials Suppliers List" form, a sample copy of which is included after the Supplementary Conditions. Contractor shall, with submission of such list, submit Qualification Data for the proposed Subcontractors when specified in Sections pertaining to the Work they are to perform.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the 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, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

## ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under conditions of the contract identical or substantially similar to these, including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such claim as provided in Article 21.

§ 12.2 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 activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner ~~shall~~may be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

## ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor and Architect, or by written Construction Change Directive signed by the Owner and Architect.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order.

§ 13.3 ~~The~~ With prior approval from the Owner, the Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents, from those that were reasonably ascertainable during the bid period, or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

## ARTICLE 14 TIME

§ 14.1 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.

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

§ 14.3 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.4.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by changes ordered in the Work, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties or any causes beyond the Contractor’s control, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine, subject to the provisions of Article 21.

§ 14.5.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause.

§ 14.6 Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Paragraph 8.3.1 shall be the Contractor’s sole remedy in the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay.

## ARTICLE 15 PAYMENTS AND COMPLETION

### § 15.1 APPLICATIONS FOR PAYMENT

§ 15.1.1 Where the Contract is based on a Stipulated Sum ~~or the Cost of the Work with a Guaranteed Maximum Price~~, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values, allocating the entire Contract Sum to the various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used in reviewing the Contractor’s Applications for Payment.

~~§ 15.1.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor, less (2) that portion of those payments attributable to the Contractor’s Fee; plus (3) payrolls for the period covered by the present Application for Payment.~~

§ 15.1.3 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 stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.1.4 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 other encumbrances adverse to the Owner's interests.

## § 15.2 CERTIFICATES FOR PAYMENT

§ 15.2.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.2.3.

§ 15.2.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. 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. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. 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 material 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.

§ 15.2.3 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 15.2.2 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 15.2.1. If the Contractor and the 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 9.2.2, 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 for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 failure to provide a current Progress Schedule;
- .9 a lien or attachment is filed;
- .10 failure to comply with mandatory requirements for maintaining Record Documents.

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

### § 15.3 PROGRESS PAYMENTS

§ 15.3.1 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment, 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 similar manner.

§ 15.3.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 15.3.3 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.

### § 15.4 SUBSTANTIAL COMPLETION

§ 15.4.1 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.

§ 15.4.2 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.

§ 15.4.3 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, and if necessary, add to the Contractor's list. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which 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. If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections including but not limited to any Architect's fees.

§ 15.4.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner ~~shall~~may make payment of retainage applying to such 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.

### § 15.5 FINAL COMPLETION AND FINAL PAYMENT

§ 15.5.1 Upon receipt of the Contractor's written 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 and, 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 terms and conditions of 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 stated in Section 15.5.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.5.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or (1) an Affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been paid, or otherwise satisfied; (2) consent of surety to payment upon final payment; (3) such other certificates, bonds, or other data as may be required by the Owner or designated elsewhere in the Contract Documents; and (4) any and all warranty documentation required by the Contract Documents. If any Contractor or 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~~encumbrance. If such ~~lien~~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 such ~~lien~~encumbrance, including costs and reasonable attorneys' fees.

§ 15.5.3 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; ~~or~~
- .3 terms of special warranties required by the Contract Documents; or
- .4 faulty or defective Work appearing after Completion.

§ 15.5.4 Acceptance of final payment by the Contractor, a Subcontractor or material 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 16 PROTECTION OF PERSONS AND PROPERTY

### § 16.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The 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 or the Contractor's Subcontractors or Sub-subcontractors; 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.

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 and property and their protection from damage, injury or loss. The Contractor shall promptly remedy damage and loss to property 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 16.1.2 and 16.1.3, except for damage or loss attributable to acts or omissions of the Owner or Architect 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 9.15.

### § 16.2 HAZARDOUS MATERIALS

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials. 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 report the condition to the Owner and Architect in writing. 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 in the amount of the Contractor's reasonable additional costs of shutdown, delay and start-up.~~

~~§ 16.2.2 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 16.2.1 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.~~

~~§ 16.2.3 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 indemnify the Contractor for all cost and expense thereby incurred.~~

§ 16.2.4 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

## ARTICLE 17 INSURANCE AND BONDS

§ 17.1 The Contractor shall purchase from, and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, insurance for protection from claims under workers' compensation acts and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and claims for damages, other than to the Work itself, to property which may arise out of or result from the Contractor's operations and completed operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or anyone directly or indirectly employed by any of them. This insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater, and shall include contractual liability insurance applicable to the Contractor's obligations under Section 9.15. Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. The Contractor shall cause the commercial liability coverage required by the Contract Documents to include: (1) ~~the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.~~

### § 17.2 OWNER'S LIABILITY INSURANCE

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

### § 17.3 PROPERTY INSURANCE

§ 17.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance on an "all risk" or equivalent policy form, including builder's risk, in the amount of the initial Contract Sum, plus the value of subsequent modifications and cost of materials supplied and installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 15.5 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 17.3.1 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and sub-subcontractors in the Project. The Owner will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

§ 17.3.2 The Owner shall file a copy of each policy with the Contractor before an exposure to loss may occur. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 17.3.3 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, and (2) the Architect, Architect's consultants, separate contractors described in Article 12, 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 covered by property insurance obtained pursuant to Section 17.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 12, if any, and the subcontractors,

~~sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.~~

~~§ 17.3.4 A loss insured under the Owner's property insurance 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. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their sub-subcontractors in similar manner.~~

#### § 17.4 PERFORMANCE BOND AND PAYMENT BOND

§ 17.4.1 The ~~Owner shall have the right to require the~~ Contractor ~~to shall~~ furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 17.4.2 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.

#### ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after 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, ~~unless compensable under Section A.2.7.3 in Exhibit A, Determination of the Cost of the Work.~~

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within ~~one~~two years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.4.3, or by terms of an 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 written 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~~two-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.

§ 18.2.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The ~~one~~two-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.

§ 18.5 The ~~one~~two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

## ARTICLE 19 MISCELLANEOUS PROVISIONS

### § 19.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract without written consent of the other, ~~except that 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 such assignment.~~

### § 19.2 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located, ~~except, that if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.4.~~

### § 19.3 TESTS AND INSPECTIONS

Tests, inspections and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities shall be made at an appropriate time. 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 Owner and Architect timely notice of when and where tests and inspections are to be made so that the Owner and Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating the costs to the Contractor.

### § 19.4 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement 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 19.4.

## ARTICLE 20 TERMINATION OF THE CONTRACT

### § 20.1 ~~TERMINATION BY THE CONTRACTOR~~(Intentionally omitted)

~~If the Architect fails to certify payment as provided in Section 15.2.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.~~

### § 20.2 TERMINATION BY THE OWNER FOR CAUSE

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the above reasons exists, the Owner, ~~upon certification by the Architect that sufficient cause exists to justify such action,~~ may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' written notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

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

#### § 20.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead ~~and profit on the Work not executed.~~

### ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.8 and Sections 15.5.3 and 15.5.4, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

§ 21.1.1 Claims by the Contractor must be initiated within 45 days after occurrence of the event giving rise to such Claim or within 45 days after the Contractor first recognizes or should have recognized the condition giving rise to the Claim, whichever is later.

§ 21.1.2 The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both.

~~§ 21.2 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines. (Intentionally omitted)~~

§ 21.3 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their 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 this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution 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, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 21.4 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 the Construction Industry Arbitration Rules in effect on the date of this Agreement. 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 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.~~

§ 21.4 The Owner and Contractor agree that litigation proceedings arising out of or relating to the Contract shall take place in New Castle County, Delaware. No such action shall be brought, however, until the completion of all Work under this Agreement, or earlier termination of this Agreement, unless litigation is commenced to toll a statute of limitation. All such Claims in question shall be aggregated for trial in a single lawsuit.

~~§ 21.5 Either party, at its sole discretion, 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).~~

§ 21.5 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 20, the Contractor shall proceed diligently with performance of the Contract, and the Owner shall continue to make payments of undisputed amounts in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 21.6 Any party to an arbitration 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 a Claim not described in the written Consent.

§ 21.6 To the extent the Contractor commences litigation against the Owner, and the Owner prevails, partially or completely, on any or all of its own claims or defenses to the Contractor's claims, leaving the Contractor with less than one hundred percent (100%) recovery, Owner shall be entitled to payment by Contractor of all reasonable professional fees, including attorney's fees, architectural fees, engineering fees, and consulting fees, together with all other costs or expenses, including the cost of any of Owner's employees' time, associated with analyzing any claim, pursuing litigation or defending the claim or litigation, which Owner may incur in connection with said litigation. This provision shall create no right to the Contractor or any other person or entity for payment of such costs or expenses.

§ 21.7 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.

#### § 21.8 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 20. Nothing contained in this Section 21.8 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

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

\_\_\_\_\_  
OWNER (Signature)

« »« »

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
CONTRACTOR (Signature)

« »« »

\_\_\_\_\_  
(Printed name and title)

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**PERFORMANCE BOND**

Bond Number: \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS, that we, \_\_\_\_\_, as principal (**"Principal"**), and \_\_\_\_\_, a \_\_\_\_\_ corporation, legally authorized to do business in the State of Delaware, as surety (**"Surety"**), are held and firmly bound unto the \_\_\_\_\_ (**"Owner"**) (*insert State agency name*), in the amount of \_\_\_\_\_ (\$\_\_\_\_\_), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. \_\_\_\_\_ dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

**Surety**, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

**Surety**, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other

transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

**Surety** hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: \_\_\_\_\_

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name:

(Corporate Seal)

By: \_\_\_\_\_ (SEAL)

Name:

Title:

SURETY

Name: \_\_\_\_\_

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name:

(Corporate Seal)

By: \_\_\_\_\_ (SEAL)

Name:

Title:

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**PAYMENT BOND**

Bond Number: \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS, that we, \_\_\_\_\_, as principal (“**Principal**”), and \_\_\_\_\_, a \_\_\_\_\_ corporation, legally authorized to do business in the State of Delaware, as surety (“**Surety**”), are held and firmly bound unto the \_\_\_\_\_ (“**Owner**”) (*insert State agency name*), in the amount of \_\_\_\_\_ (\$\_\_\_\_\_), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. \_\_\_\_\_ dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the “Contract”), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

**Surety**, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

**Surety** hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: \_\_\_\_\_

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name:  
  
(Corporate Seal)

By: \_\_\_\_\_(SEAL)  
Name:  
Title:

SURETY

Name: \_\_\_\_\_

Witness or Attest: Address: \_\_\_\_\_

\_\_\_\_\_  
Name:  
  
(Corporate Seal)

By: \_\_\_\_\_(SEAL)  
Name:  
Title:

## **SUPPLEMENTARY CONDITIONS**

1. **The Agreement:** The Agreement will be executed upon AIA Document A107-2007 Edition, *Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope*, as modified for this Project, incorporating therein the General Conditions of the Contract. Refer to the draft Agreement included in this Project Manual.
  
2. **Contract Conditions:** The Supplementary Conditions further modify, change, delete from, or add to the Agreement and shall be used in conjunction therewith and shall take precedence over any part thereof so modified or voided. Where any part of the Agreement is modified or voided by these articles, the unaltered provisions of those parts shall remain in effect.
  - A. The term “General Conditions,” wherever used in the Contract Documents, refers to the Contract provisions set forth in Articles 7 through 21 of the Agreement.
  - B. The General and Supplementary Conditions shall apply to the Project as a whole and to the Contractor with whom the Owner shall have entered into contract to perform the Work, except as specifically indicated to be the responsibility of others.
  - C. Subcontractors employed in the work shall likewise be bound by the aforesaid General and Supplementary Conditions.
  - D. The Contract Documents are defined in Section 7.1 of the Agreement and enumerated in Article 6 of the Agreement.
  
3. **Contracts in the Work:** The Work shall be executed under one prime contract.
  
4. **Contract Bonds:** The Contractor shall furnish to the Owner a Performance Bond and a Labor and Material Payment Bond, each in the stated principal amount of 100% of the Contract Sum, in the forms bound herewith.
  - A. Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in the same number of originals as the Agreement.
  - B. Contents of Performance Bond - The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing materiel or performing labor in the performance of the Contract, of all sums of money due the person for such labor and materiel. (The bond shall also contain the successful bidder’s guarantee to indemnify and save harmless the State and the agency from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)
  - C. Invoking a Performance Bond – The agency may, when it considers that the interest of the State so require, cause judgment to be confessed upon the bond.

- D. Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

5. **Progress Payments to Contractor:**

- A. **Schedule of Values:** Within 20 days after receiving the Notice to Proceed, and before the first Application for Payment, the Contractor shall submit to the Architect for review a detailed schedule of values allocated to the various portions of the Work, prepared in such format and supported by such data to substantiate its accuracy as the Architect may require. The schedule of values, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.
- (1) The schedule of values shall be prepared in the manner shown by the sample AIA Document G703 "Continuation Sheet" included in this Project Manual. As Work progresses, the Contractor shall update and submit the schedule of values with each Application for Payment to reflect the Work completed, materials stored, authorized Change Orders, quantity allowances (if any), and other items as indicated.
  - (2) Include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.
- B. **Conventional Payment Method:** Payments shall be made in accordance with the following provisions and those set forth in the Agreement and General Conditions:
- (1) **Applications for Progress Payments:** Unless otherwise agreed after execution of the Agreement, applications for monthly progress payments shall be submitted in accordance with §4.1 and §15.1 of the Agreement. Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Applications shall be fully executed and notarized.
  - (2) **Payments for Stored Materials:** Unless otherwise provided in the Contract Documents, progress payments shall also cover materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by Owner, payment may similarly be made for materials and equipment suitably stored off site at a location agreed upon in writing. Payment for materials and equipment stored on or off site shall be conditioned upon compliance by the Contractor with procedures satisfactory to Owner to establish Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include applicable insurance, storage, and transportation to the site for such materials and equipment stored off site.
  - (3) Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.

- (4) The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.

C. **Partial Payments:**

- (1) Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.
- (2) When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.
- a. Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.
- (3) If requested by the Agency, receipted bills from the Contractor, Subcontractors, and material men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

6. **Time of Completion:** The Work of this Contract shall be started promptly on the date of commencement and shall be fully and finally completed not later than the dates indicated in §2.3 of the Agreement. Refer to Section 011000 "Summary," Article "Construction Schedule," for additional milestone information including when on-site work may commence.

7. **Liquidated Damages:**

- A. The Contractor shall be liable for and shall pay to the Owner, as fixed and agreed, liquidated damages in the sum of **\$1,000.00 for each and every day** in which the actual times of substantial and final completion of the Work are delayed beyond the permitted Times of Completion indicated in Article 2 of the Agreement.
- B. Actual damages for such delay are impossible of determination; thus, said sum is a measure only of liquidated damages the Owner will sustain for such delay and shall not be construed as a penalty.
- C. The Owner shall have the right to deduct the total amount of any liquidated damages for which the Contractor may be liable from any monies otherwise due the Contractor, including any retainage under control of the Owner.
- D. The surety upon the Performance Bond furnished by the Contractor shall be liable for any such liquidated damages for which the Contractor may be liable, to the extent that the Contractor shall not make settlement therefor with the Owner.

8. **Work Restrictions and Protection Measures:**

- A. Existing facilities will be in use and shall be considered partially occupied, during the tenure of this Contract, unless indicated otherwise. As needed, the Owner will supply

Contractor with a school calendar showing when the facilities will be closed and unoccupied. Refer to Article 9, "Start-Up of the Work," Section 011000 "Summary" Article 1.11 "Construction Schedule," and to Drawings for any notes regarding Owner's use of site and resulting affect on site availability.

- B. Owner and occupants shall be afforded full and unlimited access to and use of existing occupied facilities. At no time shall Contractor cause disruption or interference of school facilities or programs without prior knowledge and consent of Owner.
- C. Contractor shall maintain existing means of pedestrian and vehicular access for Owner-occupied facilities, except as otherwise permitted by Owner. Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of ground areas for the various features of hauling, storage, etc.
- D. Contractor shall provide and maintain such barricades, warnings, and other protective devices around areas in which work is performed as required by law and to adequately alert and protect facility occupants and the public.
  - (1) Provide 48-inch high orange plastic construction safety fence around the perimeter of disturbed exterior work area.
  - (2) Warning Notices: Provide public warning notices as required by law or as deemed necessary or prudent. Install "No Trespassing" signs at no greater than 50 ft. apart around construction area and at each gate or other point of access.
- E. Protect existing facilities and conditions that are intended to remain undisturbed. Make all necessary repairs upon completion of work to restore such facilities and conditions in a manner acceptable to Owner and Architect.
- F. Existing Utilities, Services and Systems (e.g. water, storm, sanitary, gas, electric, etc.):
  - (1) Locations of existing utilities, services and systems have, to the best of Architect's knowledge, been indicated on the Drawings or otherwise made known to the extent deemed applicable; however, such information is not guaranteed. Contractor is responsible to determine to its own satisfaction, and by its own means, the locations of existing utilities, services and systems. Notify applicable authorities and statewide "Call Before You Dig" utility locator service prior to digging, excavating, or moving earth on this project. Review historical drawings and confer with Owner's facility maintenance personnel who are familiar with this property. **Contractor shall engage and pay for the services of a qualified agency to locate utilities on site that are not covered by the "Call Before You Dig" system.**
  - (2) Utilities, services and systems serving existing facilities shall not be disrupted or interrupted without prior knowledge and consent of Owner, and then only at such time or times as stipulated or otherwise convenient to Owner. Notify Owner at least 7 days prior notice of any interruption of utilities, services or systems.
  - (3) Disruption of existing utilities, services and systems shall be carefully coordinated between Contractor, Owner, and any other affected entities, so that the times and duration of such shutdown or other interruption is held to a minimum.

- (4) If interruption of any utilities, services or systems cannot be scheduled during normal working hours, such interruption of services shall be performed during times when school is not in operation and at no additional cost to the Owner.
- (5) Contractor is responsible to establish a schedule, satisfactory to Owner, for the time and duration of shutdowns and the re-starting of such existing utilities, services and systems for which he is responsible. Unless otherwise stipulated, Contractor shall obtain all approvals and permits required for such work and pay all related costs.
- (6) Maintain safe clearance of all work activities from existing utilities, services and systems.

9. **Start-Up of the Work:**

- A. Site will be made available to Contractors to mobilize and begin on-site work at the end of the current school year. Refer to Section 011000 "Summary," Article 1.11 "Construction Schedule," for general sequence by which Owner will turn over to the Contractors the area(s) designated on the Drawings for improvements.
- B. Prior to the start of any Work, Contractors shall review, verify and document with the Owner the condition and functionality of existing surfaces, equipment, and devices for which they are responsible while prosecuting the Work and that are intended to remain and/or be reinstalled and reused. Provide photographic or video documentation, as acceptable to Owner, documenting existing conditions.
- C. Prior to beginning on-site work, all submittals shall be complete, materials ordered, and delivery dates established so that on-site work may begin on date stated and be completed by dates specified.

10. **Project Coordination and Progress Schedule:**

- A. Immediately after being awarded the Contract, the Contractor shall meet with Owner to coordinate and prepare a mutually acceptable progress schedule that meets the Contract Time limits. Contractor shall combine its scheduling information with that obtained from the Owner into a proposed comprehensive progress schedule that shall be submitted for the Architect's information and Owner's approval no later than the first application for payment. Schedule shall incorporate all aspects of the Work and indicate the dates for starting and completing each stage of construction. If necessary, the accepted schedule shall be periodically revised to accommodate certain unforeseen conditions affecting the progress of the Work.
- B. Shop drawings, product data and samples shall be coordinated and submitted in a prompt and timely manner.
- C. Work shall progress in compliance with established construction progress schedule. Submit a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.
- D. Meetings: Authorized representatives (e.g. superintendents and project managers) of the Contractor, plus representatives of its Subcontractors, suppliers and manufacturers, shall meet as required by the Contract Documents, as directed by the Architect or Owner, and as needed amongst themselves, for various purposes benefiting the completion of the

Project in a timely, harmonious and satisfactory manner. Such purposes include, but are not limited to, review of progress, discussion of matters in question, coordination of the work, transfer of information, or coordination with other entities that have responsibilities or information pertaining to the Project. Types of meetings shall include, but are not limited to the following:

- (1) A pre-construction conference (initial progress/kick-off meeting).
- (2) Construction conferences (progress meetings) at least every two weeks.
- (3) Pre-installation meetings.
- (4) Coordination meetings.
- (5) Construction schedule meetings.

11. **Drawings and Specifications at the Site:** Maintain at the site one record copy of all Drawings, Specifications, Addenda, accepted Submittals, Change Orders, and other Modifications in good order and marked neatly to (1) record all changes made or deviations found during construction; (2) identify and record locations of underground utilities and other subsurface structural, electrical and mechanical conditions that are not shown on the Contract Drawings but discovered through Contractor's process of investigation required by the Contract Documents (e.g. Supplementary Conditions, Article 8, Paragraph F, et al.) or during construction operations; (3) record the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations.

- A. Record documents shall be available to Architect and Owner during the progress of the Work.
- B. The record set of drawings, marked to record all changes made during construction, shall be delivered to the Owner upon completion of the Work.

12. **Shop Drawings, Product Data, and Samples:**

- A. 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. Shop Drawings for some sections of the work may require that they be signed and sealed by a Professional Engineer, licensed in the jurisdiction where the project is located, prior to submitting to the Architect for review.
- B. 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.
- C. Samples are physical examples furnished by the Contractor which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- D. The Contractor shall bear sole responsibility for the preparation of Shop Drawings, Product Data, Samples and similar submittals based on the Contract Documents. Neither the Contractor, nor any Subcontractor or vendor, shall reproduce Contract Documents for such submittals; any such submittals with reproduced Contract Documents will be rejected without review.
- E. The Contractor shall submit with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the Work of other contractors, all Shop Drawings,

Product Data, Samples and similar submittals required by the Contract Documents or subsequently by the Architect. Submittals shall be properly identified as specified, or as the Architect may direct. At the time of submission, the Contractor shall inform the Architect in writing of any deviation in the Shop Drawings, Product Data or Samples from the requirements of the Contract Documents.

- F. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- G. The Architect will review Shop Drawings, Product Data, Samples and similar submittals with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's acceptance of a separate item shall not indicate acceptance of an assembly in which the item functions.
- H. The Contractor shall make corrections required by the Architect and shall resubmit the required number of corrected copies of Shop Drawings, Product Data, or new Samples until approved. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings, Product Data, or Samples to revisions other than the corrections requested by the Architect on previous submissions.
- I. The Architect's acceptance of Shop Drawings, Product Data, Samples and similar submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written acceptance to the specific deviation, nor shall the Architect's acceptance of such submittals relieve the Contractor from responsibility for errors or omissions in such submittals.
- J. No portion of the Work requiring Shop Drawings, Product Data, Samples or similar submittals shall be commenced until the respective submittals have been accepted by the Architect. All such portions of the Work shall be in accordance with such accepted submittals and the Contract Documents.

13. **Temporary Utilities and Facilities:**

- A. Contractor's Use of Premises: Contractor's use of Owner's facilities for any purpose is not permitted except as otherwise specified or agreed between the parties. Review all construction site utilization needs and layout with Owner and comply with Owner's directives regarding restrictions on use. Owner will not be unreasonably restrictive.
  - (1) When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the contractor making use of these areas will be held responsible for any repairs, patching or cleaning arising from such use.
- B. Temporary Utilities: The Owner will provide and pay for temporary electrical power and water required in the Work. Extensions required beyond existing facilities will be at the Contractor's own cost. Other temporary utilities required shall be at the Contractor's own cost, including any needed temporary heat.

- C. Contractor's Storage: Provide suitable storage facilities at the Site for the proper protection and safe storage of the materials. Consult the Owner and the Architect before storing any materials. Confine to those areas designated by the Owner.
- D. Contractor's Access to Site: As designated by the Owner. Contractor shall remove and restore any existing-to-remain facilities/features as needed for access.
- E. Contractor's vehicle parking shall be confined to those areas designated by the Owner.
- F. Toilets and Sanitation Facilities: Provide and maintain temporary toilet and sanitation facilities for use of all Project employees during the period allotted for on-site construction activities. Such facilities shall comply with regulations of authorities having jurisdiction. School toilet facilities shall NOT be used by Project employees.
- G. Contractors' Field Office: Provide and maintain a field office of size and convenience to accommodate record documents and other uses, including small job meetings. Suitably equip and furnish.

14. **Insurance:** Refer to General Conditions, Article 17.

- A. The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.
- B. Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award. Certificates of the insurance company or companies shall state the amount and type of coverage, terms of policies, etc.
- C. Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.
- D. The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.
- E. Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.

- F. The Contractor shall, at its own expense, (in addition to the above) carry the following forms of insurance:

1. Contractor's Contractual Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000	for each person
	\$1,000,000	for each occurrence
	\$1,000,000	aggregate
Property Damage	\$500,000	for each occurrence
	\$1,000,000	aggregate

2. Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000	for each person
	\$1,000,000	for each occurrence
	\$1,000,000	aggregate
Property Damage	\$500,000	for each occurrence
	\$500,000	aggregate

3. Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	\$1,000,000	for each person
	\$1,000,000	for each occurrence
	\$500,000	per accident
Property Damage		

4. Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.
5. Workmen's Compensation (including Employer's Liability):
  - a. Minimum Limit on employer's liability to be as required by law.
  - b. Minimum Limit for all employees working at one site.
6. Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.
7. Social Security Liability
  - a. With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf, or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.

- b. Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.
- c. If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

15. **Equality of Employment Opportunity on Public Works:** During the performance of this contract, the Contractor agrees as follows:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action 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 contracting agency setting forth this nondiscrimination clause.
- B. The Contractor 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 race, creed, color, sex or national origin."

16. **Federal Occupational Safety and Health Act of 1970:** In keeping with Article 16 of the General Conditions, the Contractor shall comply with all laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of the work. This compliance shall include, but not be limited to, the Federal Occupational Safety and Health Act of 1970.

17. **Prevailing Wage Requirement:**

- A. Wage Provisions: In accordance with Delaware Code, Title 29, Section 6960, renovation projects whose total cost shall exceed \$15,000, and \$100,000 for new construction, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware. Such wage determination is hereby made a part of this Specification (refer to copy of wage determination included in this Project Manual).
- B. The prevailing wage shall be the wage paid to a majority of employees performing similar work as reported in the Department's annual prevailing wage survey or in the absence of a majority, the average paid to all employees reported.
- C. The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.
- D. The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.
- E. Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The

Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

18. **Competent Workmen:** No person shall be employed by the Contractor or his Subcontractors to perform Work under this Contract except competent and first class workmen and mechanics. No workmen shall be regarded as competent and first class, except those who are duly skilled in their respective branches of labor.
19. **Standard Forms:** Instructions to Bidders, General and Supplementary Conditions require the use of standard forms for various submissions. Enclosed hereinafter are copies of the standard forms. Copies of these forms will be provided by the Architect.
20. **Product Options:**
  - A. **General:**
    - (1) This Article sets forth general requirements regarding products proposed for use by the Contractor or any Subcontractor.
    - (2) When submitting a product for consideration of acceptance in lieu of a product indicated as the Basis of Design, the Contractor shall be responsible to field verify all pertinent conditions, to notify all other Contractors and to assume all costs to coordinate and incorporate the proposed product with the work of all Contracts and project conditions, including the costs of any design modifications made necessary by its acceptance.
  - B. **Definitions:**
    - (1) Substitutions: Changes, proposed by a prime Bidder or Contractor, in manufacturers, brands, products, materials, equipment, assemblies, systems, and methods of construction from those required by the Contract Documents.
    - (2) 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.
  - C. **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) If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
    - (3) Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
    - (4) In specifications where a single proprietary product or manufacturer is named and substitutions are expressly prohibited, no substitutions may be requested.
    - (5) Where products are accompanied by the term "as selected," Architect will make selection.
    - (6) Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

- (7) Where products are specified by name, or otherwise indicated as the “Basis of Design,” and are accompanied by the term “or equal” or “or approved equal” or “or as approved” or where other pre-approved named manufacturers are indicated, comply with provisions in “Comparable Products” Paragraph (below) to obtain approval for use of an unnamed product.
- (8) Where products are specified by name, or are otherwise indicated as the “Basis of Design,” and accompanied by the term “or accepted substitute,” comply with provisions in “Product Substitutions” Paragraph, **during the bid period**, to obtain approval for use of a substitute or alternative unnamed product
- (9) Where acceptable manufacturers are listed in the Specifications without naming a specific product, comply with provisions in “Comparable Products” Paragraph to obtain approval for use of an unnamed product.
- (10) Unless specifically so stated, the Architect's acceptance of a manufacturer shall not be construed to be his endorsement of a particular model, style, or series of that manufacturer's products; nor shall it be construed to waive any requirements of the Contract Documents or otherwise relieve the Contractor of his responsibility to furnish products of the type, kind, quality and dimensions indicated. The possible modification of the subject manufacturer's product to comply with Specification and Project requirements shall be accomplished at no additional cost to the Owner.

**D. Comparable Products:** Where compliance with this paragraph is required, submit the following, in addition to other required submittals:

- (1) Evidence that proposed product does not require extensive revisions to 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; itemize deviations. 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.

**E. Color and Finish Selections:**

- (1) **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.
- (2) **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.

**F. Product Substitutions - General:** When substitution requests are permitted, the following shall apply:

- (1) Substitutions shall be subject to the “General Product Requirements” above and Instructions to Bidders, Article “Product Substitutions.”
- (2) Requests for substitutions shall be accompanied by all necessary supporting technical documents, samples, references, and/or other data, which substantiate the qualifications of the proposed substitute items.

- (3) Manufacturer's representatives, distributors, and subcontractors shall not directly make requests for review of substitutions to the Owner or Architect; only such requests of prime bidders will be recognized or considered.
- (4) Approvals of substitutions shall in no way relieve the Bidder of its responsibilities under the Contract for various guarantees.

**G. Product Substitutions:**

- (1) **During the Bid Period:** Architect will not consider requests for substitution received later than the number of days prior to receipt of bids as are stipulated in Instructions to Bidders, Article 13, Paragraph B. Substitutions accepted during the bid period will be evidenced by written Addenda issued by the Architect.
- (2) **After Award of Contract:** Architect will not consider requests for substitution except when the specified product is no longer available, due to circumstances outside the Contractor's control, or when Owner directs or otherwise authorizes Architect to consider a request for substitution. Substitutions accepted after award of Contract will be evidenced by a Modification in accordance with Section 9.3.3 of the Agreement. Requests for substitution after award of Contract shall satisfy the following conditions:
  - a. Requested substitution offers Owner an 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 evaluation and/or redesign services, increased cost of other construction by Owner or separate contractors, and similar considerations.
    - (i) The Owner reserves the right to recover from the Contractor the full cost of the Architect's additional services.
  - b. Requested substitution does not require extensive revisions to the Contract Documents.
  - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - d. Substitution request is fully documented and properly submitted.
  - e. Requested substitution will not adversely affect Construction Schedule.
  - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - g. Requested substitution is compatible with other portions of the Work, including, but not limited to, matching of existing materials and conditions or maintaining existing warranties where applicable.
  - h. Requested substitution has been coordinated with other portions of the Work.
  - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

21. **Noncontaminated Materials:**
- A. Materials used in this Project shall be free of the following contaminants:
    - (1) Asbestos, both friable and nonfriable fibers;
    - (2) Lead in water supply line solder;
    - (3) Lead in paint coatings and finishes; and
    - (4) Polychlorinated Biphenyls (PCBs)
  - B. Upon substantial completion, the Contractor shall submit with its application for final payment, a signed statement on company letterhead certifying that the products supplied under the Contract were free of the contaminants listed in the preceding Paragraph A. Final payment will not become due until four (4) copies of this letter are forwarded to the Architect.
22. **Project Closeout:** When the Work is nearly complete, the following activities shall be performed:
- A. Clean-up of all work areas.
  - B. Restoration of conditions intended to remain undisturbed.
  - C. Submit all pertinent closeout documentation, including warranties and instructions on care, service and maintenance of equipment, finishes, and other work as specified.
  - D. With closeout documentation in hand, review, train, and demonstrate to Owner's designated personnel the proper use, care, service, maintenance, and warranty claim procedures for the following:
    - (1) Walk-in Coolers and Freezers.
23. **Failure to Comply With Contract:** If any firm entering into a contract with the State, or Agency, that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursuing additional remedies as otherwise provided by law.
24. **Contract Insurance and Contract Liability:**
- A. In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.
  - B. The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies,

officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

25. **Right to Audit Records:**

- A. The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.
- B. Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

26. **Subcontracting Requirements:**

- A. All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:
  - (1) A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only – street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.
  - (2) A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:
    - a. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;
    - b. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and
    - c. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.
- B. The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.
- C. After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.
- D. No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidder's accompanying statement:
  - (1) Is unqualified to perform the work required;
  - (2) Has failed to execute a timely reasonable Subcontract;
  - (3) Has defaulted in the performance on the portion of the work covered by the Subcontract; or
  - (4) Is no longer engaged in such business.

27. **Penalty for Substitution of Subcontractors:** Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of (project specific amount\*). The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.
- \*one (1) percent of contract amount not to exceed \$10,000
28. **Standards of Construction for the Protection of the Physically Handicapped:** All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.
29. **Contract Performance:** Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond.
30. **Changes in the Work:**
- A. The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.
  - B. "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes direct salary plus customary fringe benefits (prevailing wage rates) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.35 times DPE).
  - C. "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.
  - D. In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen (15) percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven and one half percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of the subcontractors subcontractor. No additional costs shall be allowed for changes related to

the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

31. **Suspension and Debarment:**

- A. Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the Project."
- B. "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

32. **Debarment:**

- A. Per Section 6962(d)(5) a.3, Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may forfeit, at its discretion, all or part of the Contractor's retainage.
- B. This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

33. **Dimensions:** All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

34. **Laboratory Tests:** Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor. The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

END OF SUPPLEMENTARY CONDITIONS

**PREVAILING WAGE DETERMINATION  
WILL BE INSERTED HERE**

**NOTE: Prime Contractor shall attach this form to his written request as required by Instructions to Bidders. This form, by itself, is not a request for substitution.**

## **SUBSTITUTION SUBMISSION FORM**

TO: EI Associates  
2001 North Front Street, Building No. 3  
Harrisburg, PA 17102

FROM: \_\_\_\_\_ (Requestor's Name) \_\_\_\_\_ (Requestor's Telephone Number)

---

---

(Contractor's Name & Address)

RE: \_\_\_\_\_  
(Project Name)

Contract: \_\_\_\_\_

Gentlemen:

I hereby state that I have examined the Project criteria and certify that the proposed product hereinafter mentioned is suitable for use as intended in the project.

Proposed Substitute Manufacturer & Product: \_\_\_\_\_

---

To be used in lieu of: \_\_\_\_\_

Reference Specification Section No. \_\_\_\_\_ and Paragraph No. \_\_\_\_\_

Manufacturer's Representative: \_\_\_\_\_  
(Signature)

---

(Printed Name)

(Company Name)

(Telephone)

## SUBCONTRACTORS AND MAJOR MATERIAL SUPPLIERS LIST

Project: Christina School District

From (Contractor): \_\_\_\_\_

Kitchen Improvements at Kirk Middle School

Date: \_\_\_\_\_

To (A/E): EI Associates

Contract For: \_\_\_\_\_

2001 North Front Street, Building 3, Harrisburg, PA 17102-2118

Architect's Project Number: PP7279

List Subcontractors and Major Material Suppliers proposed for use on this Project as required by the Contract Documents. When Specification Sections apply to the Work, list the Section Number rather than a Drawing reference. Use additional copies of this form as necessary. Attach qualification data when required by the Contract Documents. Listed firms are subject to the A/E's subsequent review and acceptance of required product data, shop drawings, samples and similar submittals pertaining to the Work.

Section Number or Drawing Reference	Section Title, Material and/or Work	Firm	Address	Phone and Fax Numbers	Contact Person
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	
		<input type="checkbox"/> Qualification Data Attached		p f	

### For A/E's use:

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Copies: ☐ Owner ☐ \_\_\_\_\_ ☐ Civil Engineer ☐ Struct. Engineer ☐ Mech. Engineer ☐ Elec. Engineer ☐ \_\_\_\_\_ ☐ \_\_\_\_\_ ☐ File

## **SHOP DRAWING, PRODUCT DATA, AND SAMPLE SUBMISSION FORM**

Contractor, complete in triplicate; retain one (1) copy and attach two (2) copies with submittal to Architect.

This form must be completed and accompany all shop drawings, product data, samples, and similar submittals or resubmittals. No submittal will be accepted without it.

PROJECT NAME \_\_\_\_\_

DATE \_\_\_\_\_

SUBJECT OF SUBMITTAL \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

REFERENCE SECTION AND PARAGRAPH OF SPECIFICATIONS \_\_\_\_\_

This constitutes a statement of assurance that the attached materials have undergone scrutiny and checking as required by the General Conditions, prior to submission to the Architect and that the subject material has, or will be, coordinated with the other subcontractors, material suppliers, and prime contractors to verify dimensions, connections, etc.

\_\_\_\_\_ Signature

\_\_\_\_\_ Name of Firm

### **TO BE FILLED OUT BY ARCHITECT ONLY:**

DATE:

\_\_\_\_\_ Received, acceptable for checking

\_\_\_\_\_ Returned to contractor for checking - not acceptable

# DRAFT AIA® Document G702™ – 1992

## Application and Certificate for Payment

TO OWNER:	PROJECT: Temporary	APPLICATION NO: 001	<b>Distribution to:</b>
		PERIOD TO:	OWNER: <input type="checkbox"/>
FROM	VIA	CONTRACT FOR:	ARCHITECT: <input type="checkbox"/>
CONTRACTOR:	ARCHITECT:	CONTRACT DATE:	CONTRACTOR: <input type="checkbox"/>
		PROJECT NOS: / /	FIELD: <input type="checkbox"/>
			OTHER: <input type="checkbox"/>

### CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.  
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM .....	\$	0.00
2. NET CHANGE BY CHANGE ORDERS .....	\$	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2) .....	\$	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) .....	\$	0.00
5. RETAINAGE:		
a. 0 % of Completed Work (Column D + E on G703)	\$	0.00
b. 0 % of Stored Material (Column F on G703)	\$	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703) .....	\$	0.00
6. TOTAL EARNED LESS RETAINAGE .....	\$	0.00
(Line 4 Less Line 5 Total)		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT .....	\$	0.00
(Line 6 from prior Certificate)		
8. CURRENT PAYMENT DUE .....	\$	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE		
(Line 3 less Line 6)	\$	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ 0.00	\$ 0.00
Total approved this Month	\$ 0.00	\$ 0.00
TOTALS	\$ 0.00	\$ 0.00
NET CHANGES by Change Order	\$	0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

#### CONTRACTOR:

By: \_\_\_\_\_

Date: \_\_\_\_\_

State of: \_\_\_\_\_

County of: \_\_\_\_\_

Subscribed and sworn to before  
me this \_\_\_\_\_ day of \_\_\_\_\_

Notary Public:

My Commission expires: \_\_\_\_\_

### ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... \$ 0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

#### ARCHITECT:

By: \_\_\_\_\_

Date: \_\_\_\_\_

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

# DRAFT AIA<sup>®</sup> Document G703<sup>™</sup> - 1992

## Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	%(G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	GRAND TOTAL	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00 %	\$ 0.00	\$ 0.00

# CONSTRUCTION CHANGE DIRECTIVE

---

PROJECT: \_\_\_\_\_  
(Name, Address) \_\_\_\_\_  
\_\_\_\_\_

DIRECTIVE NUMBER: \_\_\_\_\_

DIRECTIVE DATE: \_\_\_\_\_

TO CONTRACTOR: \_\_\_\_\_  
(Business Name, Address) \_\_\_\_\_  
\_\_\_\_\_

ARCHITECT'S PROJECT NO. \_\_\_\_\_

CONTRACT FOR: \_\_\_\_\_

CONTRACT DATE: \_\_\_\_\_

---

You are hereby directed to make the following change(s) in the Work:

(Attach supplemental pages as needed)

---

The Contract Sum is proposed to be adjusted on the basis of the following:

- ☐ Lump Sum [increase] [decrease] of \$ \_\_\_\_\_.
- ☐ Unit Price of \$ \_\_\_\_\_ per \_\_\_\_\_.
- ☐ as provided in Section 13.2 of the General Conditions in AIA Document A107-2007
- ☐ as follows: \_\_\_\_\_

The Contract Time is proposed to [be adjusted] [remain unchanged]. The proposed adjustment, if any, is [an increase of \_\_\_\_\_ (\_\_) days] [a decrease of \_\_\_\_\_ (\_\_) days].

When signed below by the Owner and Architect and received by the Contractor, this Construction Change Directive becomes effective immediately, and the Contractor shall proceed promptly with the change(s) described above. Upon agreement by the Owner and Contractor to the actual adjustments in cost and time, this Change Directive, with applicable itemized accounting and supporting data, shall be incorporated into a Change Order.

## ARCHITECT:

\_\_\_\_\_  
(Business Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name and Title)

## OWNER:

\_\_\_\_\_  
(Name of School District)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name and Title)

**Distribution:** ☐ OWNER; ☐ ARCHITECT; ☐ CONTRACTOR; ☐ OTHER \_\_\_\_\_

# DRAFT AIA<sup>®</sup> Document G701<sup>™</sup> - 2001

## Change Order

PROJECT (Name and address):	CHANGE ORDER NUMBER: 001 DATE:	OWNER: <input type="checkbox"/>
TO CONTRACTOR (Name and address):	ARCHITECT'S PROJECT NUMBER: CONTRACT DATE: CONTRACT FOR:	ARCHITECT: <input type="checkbox"/> CONTRACTOR: <input type="checkbox"/> FIELD: <input type="checkbox"/> OTHER: <input type="checkbox"/>

### THE CONTRACT IS CHANGED AS FOLLOWS:

(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

The original Contract Sum was  
The net change by previously authorized Change Orders  
The Contract Sum prior to this Change Order was  
The Contract Sum will be increased by this Change Order in the amount of  
The new Contract Sum including this Change Order will be

\$	0.00
\$	0.00
\$	0.00
\$	0.00
\$	0.00

The Contract Time will be increased by Zero ( 0 ) days.  
The date of Substantial Completion as of the date of this Change Order therefore is

**NOTE:** This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

**NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.**

ARCHITECT (Firm name)	CONTRACTOR (Firm name)	OWNER (Firm name)
ADDRESS	ADDRESS	ADDRESS
BY (Signature)	BY (Signature)	BY (Signature)
(Typed name)	(Typed name)	(Typed name)
DATE	DATE	DATE

# DRAFT AIA<sup>®</sup> Document G706<sup>™</sup> - 1994

## Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR:

CONTRACT DATED:

OWNER: ☐

ARCHITECT: ☐

CONTRACTOR: ☐

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:

# DRAFT AIA<sup>®</sup> Document G706A<sup>™</sup> - 1994

## Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*  
Temporary

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR:  
CONTRACT DATED:

OWNER: ☐

ARCHITECT: ☐

CONTRACTOR: ☐

SURETY: ☐

OTHER: ☐

STATE OF:  
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

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.

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:

# DRAFT AIA<sup>®</sup> Document G707<sup>™</sup> - 1994

## Consent Of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER: ☐

CONTRACT FOR:

ARCHITECT: ☐

TO OWNER: *(Name and address)*

CONTRACT DATED:

CONTRACTOR: ☐

SURETY: ☐

OTHER: ☐

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the  
*(Insert name and address of Surety)*

on bond of  
*(Insert name and address of Contractor)*

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the  
Surety of any of its obligations to  
*(Insert name and address of Owner)*

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:  
*(Insert in writing the month followed by the numeric date and year.)*

\_\_\_\_\_  
*(Surety)*

\_\_\_\_\_  
*(Signature of authorized representative)*

Attest:

(Seal):

\_\_\_\_\_  
*(Printed name and title)*

## SECTION 011000 - SUMMARY

### PART-1 GENERAL

#### 1.01 Stipulations:

- A. The Division 1 Specification Sections shall apply to the Project as a whole and to the Contractor with whom the Owner shall have entered into contract to perform the Work, except as specifically indicated to be the responsibility of others.
- B. Any subcontractor employed in the Work shall likewise be bound by the aforesaid stipulation insofar as it may be applicable to its subcontract.

#### 1.02 Related Documents:

- A. The Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Sections apply to each Specification Section.
- B. Structural, Mechanical and Electrical Drawing sheets include the product, work results and other specifications rather than including them in this Project Manual.

#### 1.03 Summary Description of the Work:

- A. This Project entails the indicated removal and replacement of the existing kitchen walk-in cooler and freezer with new, larger units, and includes the associated selective demolition, structural modifications, new construction, cutting, patching, finishes, and modifications to plumbing, HVAC and electrical systems.

#### 1.04 Definitions:

- A. "Furnish": The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- B. "Install": The term "install" describes operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- C. "Provide": The term means to furnish and install, complete and ready for the intended use.

#### 1.05 Contracts in the Work:

- A. The Work covered by the Contract Documents, including work of the various mechanical and electrical trades, shall be executed under a single prime General Construction Contract.
- B. **Use of "Contractor" Terminology:** Conventional references to contractors by trade name that may be used in the Contract Documents, including but not limited to "General Contractor," "Mechanical Contractor," "HVAC Contractor," "Fire Protection Contractor," "Foodservice Equipment Contractor," etc., or the corresponding abbreviations therefore (G.C., M.C., HVAC.C., etc.), do not indicate work of separate prime contracts, but are intended to indicate the entity responsible for the portion of the Work being addressed. It shall be recognized that the single prime Contractor for the Project has overall Contract responsibility and that subcontractors or sub-subcontractors are engaged to perform various portions of the Work as determined by the higher-tier entity to whom they are bound by subcontract agreement. References to truly separate

prime contracts may be expressed in the Documents for coordination purposes by use of terminology like "by Others," "Not in Contract (NIC)," "by Owner," "separate Contract(s)," or "other Contractor(s)."

- C. The Contract includes furnishing all plant, labor, materials, equipment, appurtenances, and cutting and patching necessary to complete the Work as called for in the Contract Documents or reasonably inferable therefrom.
- D. While generally divided or arranged in a manner that illustrates, describes or otherwise indicates the work required under a particular subcontract or trade category, the Specifications and Drawings, in many instances, contain information pertinent or related to more than one subcontract or trade. The arranging of Specifications and Drawings into divisions, sections, or series shall in no way prohibit or inhibit the Contractor from ascertaining its complete scope of work. Contractor shall be considered to have examined all bidding and Contract Documents pertaining to all subcontract categories.
- E. The Contractor shall determine which subcontractor is responsible for any part or parts of the Work where the responsibility may be obscure or in conflict.
- F. The Drawings and Specifications are intended to be compatible and to complement each other. In the event of a discrepancy, the greater quality and quantity shall prevail in accordance with the Architect's interpretation.

1.06 - Not used.

1.07 Use of Site and Existing Facilities:

- A. General: Contractor shall have limited use of Project site for construction operations. Refer also to Supplementary Conditions.
- B. Use of Premises: Contractor's use of Owner's facilities for any purpose is not permitted except as otherwise specified or agreed to between the parties.
  - 1. Review all construction site and building utilization needs and layout with Owner and comply with Owner's directives regarding restrictions on use. Owner will not be unreasonably restrictive.
  - 2. Do not disturb portions of Project site beyond areas in which the Work is indicated and use is granted.
  - 3. Maintain access to fire hydrants, fire extinguishers, and fire protective systems for fire-fighting operations at all times.
- C. Driveways, Walkways and Entrances: Except for areas designated for Contractors' exclusive use, keep driveways, parking areas, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - 1. Schedule deliveries to minimize use of driveways and entrances by construction operations and to not conflict with school operations.
  - 2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.08 Work Restrictions:

- A. Refer to Supplementary Conditions.

1.09 Documents to Owner's Representative:

- A. All Requests for Information/Interpretation, schedule clarifications and updates, change order requests and pricing proposals, etc. are to be issued with copies to the Owner's designated representative.
- B. Additional instructions regarding administrative procedures involving the Owner's representative will be addressed during the Initial Construction Conference and subsequent Progress Meetings.

1.10 Project Coordination:

- A. Refer to Supplementary Conditions, Article 10.
- B. Contractor shall familiarize itself with all Drawing notes applicable to coordination and scheduling.
- C. Contractor shall coordinate the Work and other activities in advance of their implementation with those of the Owner and any other entities at the site, to assure efficient and orderly installation of each part of the work, especially where dependent upon each other for proper installation, connection, operation and/or appearance.
  - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
  - 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  - 4. Where necessary, prepare a memorandum for distribution to each entity involved outlining special procedures required for coordination. Include such items as required notices, reports and attendance at meetings.
  - 5. Coordination requirements also apply to changes in the work resulting from field directives, change orders, etc.

1.11 Construction Schedule:

- A. Refer to Supplementary Conditions, Article 10.
- B. Contractor shall obtain detailed scheduling information for the Work from its major trade subcontractors. Based on Contract Time requirements, information furnished by the Owner, and the Contractor's own scheduling information, the Contractor shall prepare a comprehensive Project Construction Schedule covering all aspects of the Project.
  - 1. Schedules shall take into account the following milestone dates and guideline sequence for certain items of the Work:
    - a. Notice to Proceed is anticipated by April 9, 2013.
    - b. Kirk Middle School project site will be made available to begin work on or about April 15, 2013.
    - d. Substantial completion August 1, 2013.
    - e. Final completion August 15, 2013.
  - 2. The Project Construction Schedule shall be submitted to the Owner through the Architect for review, and shall be subject to the review and approval of the Owner.

3. The Project Construction Schedule shall be maintained by the Contractor, and may be periodically revised to accommodate certain unforeseen conditions affecting progress of the Work.
- C. Contractor shall promptly notify the Architect of delay in the progress of the Work that may be caused by unknown conditions or other entities on site.
- D. Prosecution of Work: Within the stated restrictions and scheduling requirements, each Contractor shall prosecute its Work in the manner necessary to achieve completion by the stipulated date without increase in the Contract Sum. Such prosecution shall include all necessary overtime, staffing, and other means available. If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

#### 1.12 Submittal Procedures:

- A. General: Refer to General Conditions § 9.9 and Supplementary Conditions Article 12.
1. Prior to making submittal, Contractor shall review applicable Specification Section for requirements for Shop Drawings, Product Data, Samples and similar submittals.
  2. Additional submittals shall be prepared and submitted upon request by Architect.
  3. Electronic Submission: Except for physical samples, Contractor shall endeavor to submit shop drawings, product data and similar submittals in PDF format by e-mail to the Architect. Architect's e-mail system is limited to 7 MB maximum attachment size for any single transmission. Architect will review and note any corrections on the PDFs, and return to Contractor in the same manner. In general, printing shall be the responsibility of each entity needing hard copy.
- B. Shop Drawings:
1. Prepare Shop Drawings in a clear and thorough manner. Title each Shop Drawing with the Project name. Identify each Shop Drawing element by reference to the applicable sheet number, detail, schedule, room number, and specification section, article and paragraph of the Contract Documents.
  2. Identify field dimensions. Show relation to adjacent or critical features of work or products.
  3. Coordination drawings are a special type of Shop Drawing showing the relationship and integration of different construction elements that require careful coordination, often between multiple contractors, during fabrication or installation in order to fit in the space provided or function as intended. Show sequences and relationships of separate components to avoid conflicts in use of space.
  4. If hard copy Shop Drawings are necessary, Contractor shall submit six (6) copies to the Architect, of which at least three (3) copies will be returned to the Contractor.
- C. Product Data:
1. Submit only pages that are pertinent. Mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and article number. Show reference standards, performance characteristics and capacities, wiring and piping diagrams, controls, component parts, finishes, dimensions and required clearances.
  2. Modify manufacturer's standard schematic drawings, diagrams or other data to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable.

3. Manufacturer's Instructions: When required in the Specifications, submit manufacturer's printed instructions for delivery, storage, handling, assembly, installation, start-up, adjustment and finishing in quantities specified for other Product Data.
4. If hard copy Product Data are required, Contractor shall submit six (6) copies to the Architect, of which at least three (3) copies will be returned to the Contractor.

D. Samples:

1. Samples include partial sections of manufactured or fabricated work, small cuts or containers of materials; complete units of repetitively used materials; color selection submittals, including swatches showing color, texture and pattern, or printed color charts, or, where specified, examples of finishes on actual substrates; color range sets; units of work to be used for inspection and testing.
2. Mock-ups are forms of samples that are inconvenient for handling as specified for other sample submittals.
3. Where Samples are required, except for mock-ups, Contractor shall submit three (3) copies to the Architect for review, of which at least two (2) copies will be returned to the Contractor. One of the approved copies returned to the Contractor shall be retained and protected in the Contractor's field office for the duration of the Project, for reference by Owner, Architect, Contractor, Subcontractors or other entity.

- E. Other types of submittals, including installer qualification data, certifications or test reports showing compliance with requirements, and project closeout documents and spare products are addressed elsewhere in the Contract Documents.

## PART-2 PRODUCTS

### 2.01 Product Options:

- A. Refer to Supplementary Conditions, Article 20.

### 2.02 Product Warranties:

- A. Warranties specified in Sections of Divisions 02 through 33 shall be in addition to, and run concurrent with (and beyond in some cases), 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. Warranties Specified in Divisions 02 through 33: 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.
  2. Refer to Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties. Special Warranties are those 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.
  3. All warranties required by the Contract Documents, including all warranties specified in Divisions 02-33, shall be governed by the laws of the Commonwealth of Pennsylvania. Any dispute, controversy or claim between the Owner and the issuer of the warranty shall be subject to the dispute resolution process as set forth in Sections 5 and 21 of the Agreement and General Conditions.

- C. Submittal Time for Product Warranties: Comply with requirements in the General Conditions and Division 01 Section "Closeout Procedures."

### PART-3 EXECUTION

#### 3.01 Project Closeout - Restoration of Conditions:

- A. At conclusion of work in each area of construction, remove temporary facilities and protection measures when permanent construction and facilities are in place. Replace, patch, repair, and otherwise restore existing construction and site amenities which are intended to remain undisturbed but which suffer damage due to construction operations.

END OF SECTION 011000

## SECTION 012300 – ALTERNATES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes:

1. Administrative and procedural requirements for alternates.
2. Schedules of Alternates: In Part 3 of this Section. Specification Sections, which may be referenced in schedules, contain requirements for products necessary to achieve the work described under each alternate.

#### 1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Form of Proposal for certain defined work that may be added to or deducted from the base bid amount if 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. The cost or credit for each alternate is the net addition to or deduction from the base bid to incorporate the alternate into the Work. No other additions to or deductions from the base bid are made for alternates in establishing the Contract Sum.
2. Materials and Workmanship: Except as otherwise indicated in the Contract Documents, materials and workmanship for alternates shall comply with the corresponding requirements indicated for the base bid design.

#### 1.3 PROCEDURES

A. Coordination: Modify 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.
2. Include costs of all related coordination, modification, or adjustment in each alternate.

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

### PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

## 3.1 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1 (Increase Size of Addition for Storage Room):** Increase the size of the addition construction in accordance with the Alternate Bid Plan on Drawing A1 to accommodate an increase in size to Storage Room M111H. Refer to all pertinent Drawings.

END OF SECTION

## SECTION 017300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Installation of the Work.
  - 3. Cutting and patching.
  - 4. Chases and openings.
  - 5. Sealing of through-penetrations.
  - 6. Coordination of Owner-installed products.
  - 7. Progress cleaning.
  - 8. Starting and adjusting.
  - 9. Protection of installed construction.
- B. Related Sections:
  - 1. Section 011000 "Summary" for limits on use of Project site.
  - 2. Section 017700 "Closeout Procedures" for final cleaning.
  - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of existing building.
  - 4. Refer to other Sections for additional requirements and limitations applicable to cutting and patching individual parts of the Work.

#### 1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work. In-place construction may be new or existing construction.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation or performance of other work.

#### 1.3 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. **Operational Elements:** Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include, but are not necessarily limited to, the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Mechanical systems piping and ducts.
    - e. Control systems.
    - f. Communication systems.
    - g. Electrical wiring systems.
  3. **Other Construction Elements:** Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
    - a. Water, moisture, or vapor barriers.
    - b. Membranes and flashings.
    - c. Equipment supports.
    - d. Piping, ductwork, vessels, and equipment.
    - e. Noise- and vibration-control elements and systems.
  4. **Visual Elements:** Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. **Coordination of Cutting and Patching:** Upon commencement of Project and before proceeding, meet at Project site as part of the preconstruction conference with parties involved in cutting and patching, including mechanical and electrical trades and Owner. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding. Reconvene as necessary during the progress of the work before proceeding with specific cutting and patching activities to review and resolve specific cutting and patching issues that arise.
- C. **Manufacturer's Installation Instructions:** Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
  - 3. Before starting the Work, carefully examine all preparatory Work that has been executed to receive the succeeding Work. Check carefully, by whatever means are required, to ensure that the Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the Contractor of any defects or imperfections in preparatory Work that will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers intended to remain.

- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - 1. Description of the Work.
  - 2. List of detrimental conditions, including substrates.
  - 3. List of unacceptable installation tolerances.
  - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. 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.
- B. 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 caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect.
- E. Surface and Substrate Preparation: Comply with manufacturer's recommendations for preparation of substrates to receive subsequent work.

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, field verify dimensions and layout information indicated in the Contract Documents in relation to existing control points, benchmarks and other pertinent conditions. If discrepancies are discovered, notify Architect promptly, and obtain Architect's written interpretation or supplemental instructions.
- B. General: Contractor shall layout its Work and be responsible for its correctness. Expenses in connection with layout of each Contract's Work shall be borne accordingly by each applicable Contractor.
  - 1. Use established benchmarks and control points to set lines and levels as needed to locate each element of the Work.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
  - 6. In rooms with exposed structure for ceilings, the locations, direction of runs and configuration of all exposed conduit, piping, ducts, etc. shall be approved by Architect prior to installation. Coordinate and run these systems perpendicular and parallel to

structural framing, as high as reasonably possible, unless otherwise approved by Architect.

- C. Site Improvements: As applicable, locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations. Locate and lay out the site improvements, including utility service lines, equipment, and other work.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, and floor levels, including plumb lines for walls and columns. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Each Contractor shall maintain a log of its layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 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.
  - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- 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. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
  - 4. Do not attach to roof decking.
- I. Set sleeves, hangers, and anchors required for its Work in their proper and permanent locations.
- J. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, review with Architect and arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- K. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ workers skilled in the modification and installation of the existing materials 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. Temporary Support: Provide temporary support of work to be cut.
- C. 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.
- D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements of Section 011000 Section "Summary."
- E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- G. 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.
    - c. Provide straight edges where new finish surfaces meet existing.
  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.

6. Where existing mechanical or electrical work (equipment, ductwork, piping, conduits, etc.) is being removed from a wall, floor, ceiling or roof area that is intended to be otherwise undisturbed, the remaining opening shall be closed, filled, patched and/or repaired by the Contractor responsible for removal of the mechanical or electrical work, except where indicated otherwise.

- a. Such in-fill or patching work shall be performed in accordance with patching requirements indicated in this Section and elsewhere in the Contract Documents.

- H. 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 CHASES AND OPENINGS

- A. General: Construct openings with as minimal annular space as practicable and in compliance with other requirements of the Contract Documents.

- B. Installing Chases and Openings in Existing Construction:

1. Unless otherwise noted, Contractor shall cut, patch and finish all chases and openings required for the installation or other performance of its work in existing construction. Patching and finishing shall match existing adjacent undisturbed surfaces.
2. Holes or openings to be put in existing concrete shall be bored.
3. For openings being cut into existing wall, floor or roof construction, provide lintels or supplemental framing required for support of the surrounding construction and new equipment.
  - a. Lintels and supplemental steel framing shall be in accordance with the criteria established by the Drawings and Specifications.

- C. Installing Chases and Openings in New Construction

1. Provide chases or openings as required in new wall, floor, ceiling and roof construction, including lintels or supplemental framing, as applicable.
2. Coordinate the exact size and location of chases and openings required for the work with the installers of new wall, floor, ceiling and roof construction, and field verify the size and location of chases and openings so provided. Show chases and openings accordingly on record drawings.
3. Where necessary to build into new construction as it is being erected, each trade shall, in a timely manner, furnish all sleeves, anchors, bolts and other inserts required for its Work, for installation by the Contractor responsible for the new construction into which they are to be built. Each Installer shall coordinate the proper setting and permanent location of its sleeves, anchors, bolts and other inserts.

### 3.7 SEALING OF THROUGH-PENETRATIONS

- A. Unless indicated otherwise, through-penetrations shall be sealed by the Contractor whose work requires the opening. Except where more stringent requirements are indicated, seal through-penetrations in new and existing assemblies in accordance with the following minimum requirements:
1. In non-fire-rated partitions, seal through-penetrations with an approved material and method to provide a smoke and sound barrier. Where such penetration seal is exposed to view, seal shall provide a finished surface acceptable to Architect and Owner.
  2. In non-fire-rated elevated (not on grade) floors, seal through-penetrations with an approved firestop system to provide a 1-hour UL fire-resistance rating.
  3. In fire-rated assemblies (partitions, floors, roofs, etc.), seal through-penetrations with an approved firestop system to provide a fire-resistance rating no less than the surrounding penetrated assembly. Firestop system shall also comply with any required temperature-rating (T-rating).
  4. Seals at floor penetrations shall additionally provide a durable water barrier such as a sleeve with the top edge a minimum of 1/2" above the surrounding finished floor.

### 3.8 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.9 PROGRESS CLEANING

- A. Definition: A "work area" shall be defined as an area in which the Contractor is working, storing, or occupying, whether a site or building area.
- B. General: Contractor shall be responsible for **DAILY** clean-up in Project work areas of trash, waste materials, and debris generated by its activities, subcontractors, or employees. Enforce requirements strictly. Dispose of waste materials lawfully. Comply with the following:
1. Requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Waste collection containers shall be of sizes adequate to handle waste from construction operations.
  3. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
  4. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.

5. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
  - a. Utilize containers intended for holding waste materials of type to be stored.
- C. Site: Maintain Project site free of waste materials and debris.
- D. 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.
- E. 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.
- F. Concealed Spaces: Remove debris from concealed spaces before enclosing.
- G. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- H. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Remove waste materials from site and dispose of off-site in a legal manner. Comply with waste disposal requirements in Section 017419 "Construction Waste Management."
- 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.
- L. Bulk Demolition Debris: Remove, containerize, transport, and dispose of bulk demolition debris.
- M. Incidental Demolition Debris and Other Construction Waste: Provide dumpster(s) of sufficient capacity for general waste and debris, excluding bulk demolition debris. Locate dumpster(s) where acceptable to Owner and be responsible to haul and dispose of dumpster contents as necessary to prevent overfilling.
- N. Furnish drum containers for the depositing of miscellaneous trash and waste generated within contractor field office and storage areas. This includes, but is not limited to, areas used by Contractor's personnel for coffee breaks and meals. Keep these areas clean and sanitary.

- O. Unless otherwise indicated, deposit general waste materials on a daily basis in the trash dumpster furnished by the Contractor. Do not allow waste materials to accumulate without consolidating and transporting them to the dumpster(s) at least once per work day, or as may otherwise be directed by the Owner or Architect to facilitate job cleanliness. Broom clean work areas at least once a week.
- P. General Contractor shall police the site and building work areas at least once a week to clean up scattered litter and miscellaneous waste.
- Q. Clean-up of Debris and Earth Deposits on Roadways: Expeditiously remove any debris, mud or earth deposited by construction vehicles on public rights-of-way and on-site paved areas. Upon failure to do so, Owner or Architect may order clean-up work to be performed by others at expense of Contractor responsible for the debris or deposits.

### 3.10 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements of related systems.
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

### 3.11 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.

END OF SECTION

## SECTION 017700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties and bonds.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Sections:
  - 1. Section 017300 "Execution" for progress cleaning of Project site.
  - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Section 017839 "Project Record Documents" for submitting Record Contract Drawings.
  - 4. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 5. Sections of Divisions 2 through 33 for specific closeout and special cleaning requirements for the Work of those Sections.

#### 1.2 ACTION SUBMITTALS

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

#### 1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

#### 1.4 MAINTENANCE MATERIAL SUBMITTALS

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

## 1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the reasons why the Work is incomplete. If requested by the Architect, provide the value of each item on the list.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, and similar final record information.
  - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
    - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature and date for receipt of submittals.
  - 5. Submit test/adjust/balance records.
  - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
  - 1. Advise Owner of pending insurance changeover requirements.
  - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise and coordinate with Owner's personnel for changeover in security provisions.
  - 3. Complete startup and testing of systems and equipment.
  - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
  - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  - 6. Advise Owner of changeover in heat and other utilities.
  - 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 9. Complete final cleaning requirements, including touchup painting.
  - 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- D. Substantial Completion 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 prerequisites. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

## 1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment in accordance with General Conditions Article 9.
  2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list). Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Final Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

## 1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

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

4. Submit list of incomplete items in the following formats:
  - a. Electronic file(s) on disk in Microsoft Excel editable format.
  - b. At least two paper copies of list, unless otherwise indicated.

## 1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties in accordance with paragraph 1.5-B above, or on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- 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 printed copies of original warranty documents in an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty and bond. 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 AND BONDS," Owner and Project name, and name, address and telephone number of Contractor.
- D. Additionally, provide electronic PDF 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: Personnel, materials, and supplies to perform final cleaning shall be included in each Contractor's Bid. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
  - 1. Unless otherwise directed or approved, perform final cleaning of an area just prior to Architect's inspection for Substantial Completion for entire Project or for a designated portion of Project.
  - 2. Cleaning materials and methods shall be subject to review and approval by Owner. Schedule meeting with Owner to perform such review substantially in advance of final cleaning.
- 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. 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.
  - 2. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - 3. 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.
  - 4. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - 5. Remove labels that are not permanent.
  - 6. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - 7. Leave Project clean and ready for occupancy.
  - 8. Comply with other requirements set forth elsewhere in the Contract Documents, including additional or more stringent requirements specified in technical Specification Sections of Divisions 2 through 33.
- C. General:
  - 1. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
  - 2. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - 3. Sweep concrete floors broom clean in unoccupied spaces.
  - 4. Clean finished cooler and freezer surfaces.
  - 5. Clean finished floors.
  - 6. Clean wall and trim surfaces.
- D. Plumbing:
  - 1. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

## E. HVAC:

1. Replace disposable air filters and clean permanent air filters (if any in project).
2. Clean exposed surfaces of diffusers, registers, and grilles.
3. Clean ducts, blowers, and coils.

## F. Electrical:

1. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.

## 3.2 REPAIR OF THE WORK

- A. General: Each Contractor shall be responsible to perform repairs to its Work and to other construction, new or existing, damaged by its Work or operations. Use tradesmen skilled in the repair of each applicable type of surface.
- B. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- C. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
  4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

## SECTION 017823 - OPERATION AND MAINTENANCE DATA

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Emergency manuals.
  - 2. Operation manuals for equipment.
  - 3. Product maintenance manuals.
  - 4. Equipment maintenance manuals.
- B. Related Requirements:
  - 1. Section 011000 "Summary," Article "Submittal Procedures," for submitting copies of submittals for operation and maintenance manuals.
  - 2. Sections of Divisions 3 through 33 for specific operation and maintenance manual requirements for the Work of those Sections.

#### 1.2 DEFINITIONS

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

#### 1.3 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to modifications and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
  - 1. PDF electronic file. Assemble each manual into a composite electronically-indexed file. Submit on digital media acceptable to Architect.
    - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically-linked operation and maintenance directory.
    - b. Enable inserted reviewer comments on draft submittals.

- C. Initial Manual Submittal: Submit one draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
  - 1. Correct or modify each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's Agent's comments and prior to commencing demonstration and training.

## PART 2 - PRODUCTS

### 2.1 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.
  - 2. Table of contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Name and address of Owner.
  - 4. Date of submittal.
  - 5. Name and contact information for Contractor.
  - 6. Name and contact information for Architect.
  - 7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
  - 8. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
  - 1. If operation or 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 subsystems, equipment, and components of one system into a single binder.

- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

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

## 2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
  2. Emergency instructions.
  3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Flood / Water leak.
  2. Power failure.
  3. Equipment failure.
  4. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits.
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

## 2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  2. Performance and design criteria if Contractor is delegated design responsibility.
  3. Operating standards.
  4. Operating procedures.

5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.4 PRODUCT MAINTENANCE MANUALS

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, supplier and maintenance service agent (if applicable), and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

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.

## 2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment 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, supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard 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.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available from manufacturer.

- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
  - 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.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. 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. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. 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. Operation and Maintenance Manual for Equipment: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each piece of equipment not part of a system.
  - 1. Engage a factory-authorized service representative to assemble and prepare information for each piece of equipment not part of a system.
- D. 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.
  - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. 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 Section 017839 "Project Record Documents."
- F. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Contract Drawings.
- B. Related Sections:
  - 1. Division 1 Section "Closeout Procedures" for general closeout procedures.

#### 1.2 CLOSEOUT SUBMITTALS

- A. Record Contract Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set of marked-up record prints including addenda and contract modifications.
- B. Contractor Certification: Submit certification that the record Drawings, maintained by the Contractor for the Owner, have been updated and accurately reflect all "as built" conditions for which the Contractor is responsible.

### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Include changes made by addenda and contract modifications.
    - a. Give particular attention to information on concealed elements that would be difficult to identify, locate or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
  - 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. Revisions to routing of conduits.
    - d. Revisions to electrical circuitry.
    - e. Actual equipment locations.

- f. Locations of concealed internal utilities.
    - g. Changes made by Change Order or Construction Change Directive.
    - h. Changes made following Architect's written orders.
    - i. Details not on the original Contract Drawings.
    - j. Field records for variable and concealed conditions.
    - k. Record information on the Work that is shown only schematically.
  - 3. Mark the Contract Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.
  - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  - 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- 1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Identification: As follows:
    - a. Owner and Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

### 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: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Owner's and Architect's reference during normal working hours.

END OF SECTION 017839

## SECTION 017900 - DEMONSTRATION AND TRAINING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of walk-in cooler and freezer equipment.
  - 2. Training in operation and maintenance of systems and equipment.
- B. Related Requirements:
  - 1. Sections of Divisions 3 through 33 for additional requirements regarding demonstration and training for specific products in those Sections.

#### 1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objectives and outline for each training module.
  - 1. Indicate proposed training utilizing manufacturer-produced demonstration and training video recordings for systems, equipment, and products.
- B. Attendance Record: For each training session, submit list of participants and length of instruction time.

#### 1.3 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training.

#### 1.4 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

## PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: An instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    - a. System and equipment descriptions.
    - b. Performance and design criteria if Contractor is delegated design responsibility.
    - c. Operating standards.
    - d. Regulatory requirements.
    - e. Equipment function.
    - f. Operating characteristics.
    - g. Limiting conditions.
    - h. Performance curves.
  - 2. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project record documents.
    - e. Identification systems.
    - f. Warranties and bonds.
    - g. Maintenance service agreements and similar continuing commitments.
  - 3. Emergencies: Include the following, as applicable:
    - a. Instructions on meaning of warnings, trouble indications, and error messages.
    - b. Instructions on stopping.
    - c. Shutdown instructions for each type of emergency.
    - d. Operating instructions for conditions outside of normal operating limits.
    - e. Sequences for electric or electronic systems.
    - f. Special operating instructions and procedures.
  - 4. Operations: Include the following, as applicable:
    - a. Startup procedures.
    - b. Equipment or system break-in procedures.
    - c. Routine and normal operating instructions.
    - d. Regulation and control procedures.
    - e. Control sequences.
    - f. Safety procedures.
    - g. Instructions on stopping.
    - h. Normal shutdown instructions.
    - i. Operating procedures for emergencies.

- j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
    - a. Alignments.
    - b. Checking adjustments.
    - c. Noise and vibration adjustments.
    - d. Economy and efficiency adjustments.
  - 6. Troubleshooting: Include the following:
    - a. Diagnostic instructions.
    - b. Test and inspection procedures.
  - 7. Maintenance: Include the following:
    - a. Inspection procedures.
    - b. Types of cleaning agents to be used and methods of cleaning.
    - c. List of cleaning agents and methods of cleaning detrimental to product.
    - d. Procedures for routine cleaning.
    - e. Procedures for preventive maintenance.
    - f. Procedures for routine maintenance.
    - g. Instruction on use of special tools.
  - 8. Repairs: Include the following:
    - a. Diagnosis instructions.
    - b. Repair instructions.
    - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
    - d. Instructions for identifying parts and components.
    - e. Review of spare parts needed for operation and maintenance.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training modules. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operations and Maintenance Data."
- B. Set up instructional equipment at instruction location.

### 3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  - 1. Architect will furnish information describing basis of system design, operational requirements, criteria, and regulatory requirements.
  - 2. Owner will furnish a representative to describe Owner's operational philosophy.
  - 3. Owner will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule training with Owner through Architect with at least 7 days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- D. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

### 3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. Pre-Produced Video Recordings: If available from system, equipment or product manufacturers, provide pre-produced training video recordings in DVD format and use as a component of training modules. Incorporate training videos in submitted operations and maintenance manuals.

END OF SECTION

SECTION 024119 - SELECTIVE DEMOLITIONPART-1 GENERAL1.01 Summary:

- A. This Section includes, but is not limited to, the removal or demolition of certain parts of existing construction, such as site work, building structures, finishes, equipment, materials, HVAC systems, plumbing systems, and electrical systems, and the provision of incidental and related repairs thereto, as called for in the Drawings and Specifications or as required to accommodate the installation of new work.
  - 1. In areas to be demolished, Owner will, unless indicated otherwise, remove or relocate to a protected area existing furnishings and equipment that are not fixed or attached to the building or its systems..
  - 2. Prior to start of demolition operations, review materials and equipment to be removed with Owner to identify or verify all items that are to be salvaged and remain the property of Owner, either for reinstallation or transfer to storage.
  - 3. "Systems" shall be understood to include the contents thereof or attachments thereto, such as water, steam, glycol, refrigerant, insulation, fittings, tags, controls, etc.
- B. Demolition work indicated or called for in the Drawings and Specifications is intended for general location and description only, and shall not be construed as a limit or extent of the work required. Contractor shall demolish, dismantle, or otherwise remove, as indicated, existing structures, systems, equipment, materials or appurtenant parts in their entirety or to such minimum extent as is required to accommodate the new work.
- C. Demolition Repair Responsibility: Unless otherwise indicated, the Work includes patching and repair of existing construction from which existing components, equipment or assemblies are being removed, and which is otherwise intended to remain undisturbed. Refer also to Division 1 Section "Execution," cutting and patching requirements.
- D. Cutting and patching of openings into existing work required for installation of new mechanical, plumbing, and electrical components is included in the Work. Refer also to Division 1 Section "Execution," cutting and patching requirements.
- E. Removal of selective existing plumbing, HVAC, and electrical system components is included in the Work.
  - 1. The General Contractor shall determine, to its satisfaction, that such utilities serving the areas of general demolition are properly shut-off, removed or terminated as necessary before proceeding with its own demolition work.
- F. Related Sections:
  - 1. Division 1 Sections for general requirements regarding work restrictions, existing utilities, temporary protection measures, warnings, and barriers.
  - 2. Sections in other Divisions for specific demolition requirements applicable to particular parts of the Work.

## PART-2 PRODUCTS

### 2.01 Materials:

- A. New materials required for repairs incidental to the performance of demolition work shall match existing undisturbed finishes unless otherwise indicated.

## PART-3 EXECUTION

### 3.01 Performance of Removal and Demolition Work:

- A. The means, methods and procedures employed in the execution of demolition work shall be at the Contractor's discretion and risk; however it is imperative that cutting be performed in a manner that will permit neat, clean seams where the patches are exposed in the finished work.
  - 1. The Contractor shall be responsible for all damage or injury resulting from such means, methods or procedures, including, but not limited to, those caused by the fall or collapse of any part or portion of the structure resulting from its operations or failure to provide proper protections.
  - 2. If such means, methods or procedures are, in the Architect's or Owner's opinion, causing excessive residual damage to other parts of the building, the Owner may cause such operations to cease until other suitable methods are employed and maintained.
  - 3. Contractor shall immediately notify the Architect of the questionable stability of any part of the structure and shall not proceed with that part of the work.
- B. Contractor is responsible to establish a schedule for performance of the demolition work, and shall obtain all approvals and permits required for such work, and, unless otherwise stipulated elsewhere, shall pay all related costs.
- C. Demolition operations shall be confined to the Owner's property. Contractor shall be responsible for any intrusion on, or damage to, adjacent properties due to its operations.
- D. Provide and maintain temporary barriers or enclosures to confine residual dust and debris within the area of demolition work. Debris may be water sprinkled to lay the dust.
- E. Erect and maintain all bracing, shoring, needles, and other supports necessary to prevent collapse or displacement of any part of the structure or site during performance of its demolition work, until the permanent construction has been repaired or otherwise reinforced.
- F. Existing materials and equipment to be removed and reinstalled as indicated as part of the Project or transferred to Owner's storage shall be salvaged, handled and retained as Owner's property as specified in Article 3.02.
- G. Existing materials and equipment to be removed but not designated to be retained as Owner's property shall become the property of the Contractor and shall be promptly removed from the site to a legal, off-site location of Contractor's selection and convenience at no increase in Contract Sum or Time.
- H. Existing materials and equipment indicated for removal or demolition shall, unless otherwise indicated, have all plumbing, heating, ventilating, and electrical work pertinent to the existing installation disconnected and removed. Unless indicated otherwise, such services and connections shall be removed to the minimum extent required to permit removal of the indicated construction and installation of new work.

- I. Existing materials, structures, equipment and other portions of the existing property to be demolished or otherwise removed shall be removed to the extent indicated, or if not specifically indicated, to the minimum extent required to permit proper placement and installation of new work.
  - 1. General Contractor: Remove indicated existing walls and partitions down to sufficient depth below floor or grade line. Remove indicated existing ceilings, slabs to the extent indicated.
- J. Combustible materials that are removed and not retained as Owner's property shall be taken out of the building as demolition progresses. Do not allow such materials to accumulate inside overnight.
- K. No on-site burning is permitted.
- L. Demolished materials shall not be permitted to accumulate on site unless otherwise indicated or allowed by Owner/Architect.

### 3.02 Salvaging Existing Materials, Equipment and Components:

- A. Existing materials, equipment and components designated to be retained as Owner's property, either for reinstallation as part of the Project or transfer to Owner's storage, shall be removed in a careful, workmanlike manner to minimize damage to functional parts, assemblies or finishes and to prevent defects or damage which will detract from or impair their usefulness. Additional salvage requirements apply when specified elsewhere in the Specifications or Drawings.
- B. Items to be Reinstalled as Part of the Project (if any):
  - 1. Remove and protectively store items prior to reinstallation. Rehabilitate items where indicated elsewhere in the Drawings or Specifications. Reinstall where indicated on Drawings. Protect, clean and otherwise treat reinstalled items as if new, prior to Owner's acceptance and occupancy.
  - 2. Remove and reinstall as part of Project the items (if any) indicated elsewhere in the Drawings or Specifications.

END OF SECTION

SECTION 033053 - MISCELLANEOUS CAST-IN-PLACE CONCRETEPART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Sections:
  - 1. Structural Drawings subgrade preparation and for drainage fill under slabs-on-grade.

## 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Other Action Submittal:
  - 1. Design Mixtures: For each concrete mixture.

## 1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
  - 1. "General Requirements."
  - 2. "Formwork and Formwork Accessories."
  - 3. "Reinforcement and Reinforcement Supports."
  - 4. "Concrete Mixtures."
  - 5. "Handling, Placing, and Constructing."
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

PART 2 - PRODUCTS

## 2.1 FORMWORK (if any)

- A. Furnish formwork and formwork accessories according to ACI 301.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.

## 2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
  - 1. Portland Cement: ASTM C 150, Type as noted on Structural Drawing.
    - a. Fly Ash: ASTM C 618, Class C or F.
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregate: ASTM C 33, graded, nominal maximum aggregate size as noted on Structural Drawing.
- C. Water: ASTM C 94/C 94M.

## 2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.5 RELATED MATERIALS

- A. Vapor Retarder: Plastic sheet, ASTM E 1745, Class A.
- B. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

## 2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

## 2.7 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, and as noted on Structural Drawings.
  - 1. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

## 2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
  - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK (if any)

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 VAPOR RETARDERS

- A. Install, protect, and repair vapor retarders according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.
  - 1. Lap joints 6 inches and seal with manufacturer's recommended adhesive or joint tape.

### 3.4 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- 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 with groover tool to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
- D. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment.

### 3.7 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 1/2 inch.
  - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
  - 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.

- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed finished as-cast concrete where indicated:
  - 1. Smooth-rubbed finish.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

### 3.8 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
  - 1. Do not further disturb surfaces before starting finishing operations.
- C. Trowel Finish: Apply a hard trowel finish to new slab or slab in-fill surfaces.

### 3.9 CONCRETE PROTECTING 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 ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven

days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in 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. Maintain continuity of coating and repair damage during curing period.

### 3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall engage a qualified testing agency to perform tests and inspections.
- B. Tests: Perform according to ACI 301.
  1. Testing Frequency: One composite sample shall be obtained for each day's pour of each concrete mix exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
  2. Testing Frequency: One composite sample shall be obtained for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.

### 3.11 REPAIRS

- A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 033053

## SECTION 042000 - UNIT MASONRY ASSEMBLIES

### PART-1 GENERAL

#### 1.01 Summary:

- A. This Section includes unit masonry assemblies consisting of the following:
  - 1. Concrete masonry units (CMU), standard, matte-face gray units.
  - 2. Face brick, including but not limited to the following:
  - 3. Structural-clay facing tile for cutting and patching.
  - 4. Mortar and grout.
  - 5. Joint reinforcement and reinforcing steel.
  - 6. Ties and anchors.
  - 7. Flashing.
  - 8. Miscellaneous masonry accessories.
  - 9. Cavity-wall insulation.
  - 10. Moisture barrier coating on outer face of all concrete block back-up wythe in cavity walls.
- B. Masonry work includes cutting and patching of existing masonry walls.

#### 1.02 Definitions:

- A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

#### 1.03 Performance Requirements:

- A. Provide unit masonry that develops indicated net-area compressive strengths ( $f'_m$ ) at 28 days.
- B. Determine net-area compressive strength ( $f'_m$ ) of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

#### 1.04 Submittals:

- A. General: Before constructing wall panel mock-ups, obtain Architect's review and acceptance of all related product data, shop drawings, and samples.
- B. Product Data: Manufacturer's technical descriptive information, standard construction details, dimensions of components, and specifications for each type of masonry unit, accessory and other product indicated.
- C. Shop Drawings:
  - 1. Reinforcing: Show details of bending and placement of bars for reinforced masonry. Comply with ACI 315 "Details and Detailing of Concrete Reinforcement" showing bar schedules, diagrams of bent bars, and arrangement of masonry reinforcement. Show elevations of reinforced walls.
  - 2. Outlines of proposed procedures for reinforcing bar placement and grouting.
- D. Samples: Submit the following samples, typical and representative of the materials selected or proposed for use in the Work:

1. Face Brick: Not less than five boxed or strapped, typical for each shade range proposed.
  2. Samples for Initial Color Selection:
    - a. Colored mortar samples showing full range of colors available. Colors to be selected for face brick.
- E. Material Certificates: Submit affidavits, executed by material suppliers and masonry unit manufacturers, certifying that materials and units for use in this Project comply with the requirements of the Specifications, including compliance with standards and type designations within standards. These affidavits shall contain the company name of the material supplier or unit manufacturer, the signature of an authorized company representative, the name of the project, and the type of materials or units. Provide for each type and size of the following:
1. Masonry units.
    - a. Include material test reports from a qualified testing agency substantiating compliance with requirements.
    - b. For exposed brick, include material test report for efflorescence according to ASTM C 67.
    - c. For masonry units used in structural masonry, include data establishing average net-area compressive strength of units.
  2. Cementitious materials. Include brand, type, and name of manufacturer.
  3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
  4. Reinforcing bars.
  5. Joint reinforcement.
  6. Anchors, ties, and metal accessories.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports, per ASTM C 780, for mortar mixes required to comply with property specification.
  2. Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- G. Qualification Data: For independent testing agency specified in "Quality Assurance" Article.

#### 1.05 Quality Assurance:

- A. Installers' Qualifications: Masonry work shall be performed only by competent, skilled masonry mechanics of proven abilities, employing the latest accepted and recommended practices established by the National Concrete Masonry Association (NCMA), the Brick Institute of America (BIA), and the International Building Code (IBC).
- B. Manufacturers' Qualifications: Brick and concrete masonry unit manufacturers shall be established firms possessing the force and facilities required to manufacture high-quality units conforming to Specifications, and in quantities sufficient to meet construction schedules.
- C. Source Limitations for Materials:
  1. 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.

2. Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.
  3. The accepted types, kinds, and supply sources of unit masonry and mortar materials shall remain the same throughout the work and shall not be changed without the Architect's review.
- D. Masonry Standards: Unless indicated otherwise, comply with ACI 530/ASCE 5/TMS 402, "Building Code Requirements for Masonry Structures," ACI 530.1/ASCE 6/TMS 602 "Specifications for Masonry Structures," and the published technical notes and recommended practices of the National Concrete Masonry Association (NCMA), Brick Industry Association (BIA), and International Masonry Institute (IMI).
- E. Testing Agency Qualifications: An independent testing agency, acceptable to Owner, Architect and authorities having jurisdiction, qualified according to ASTM C 1093 to conduct the field quality control testing indicated, as documented according to ASTM E 548.
- H. Masonry Unit Testing: At the discretion of the Architect, randomly selected units, considered representative of the lot, shall be submitted to an independent testing laboratory, of the Architect's choice, for sampling and testing in accordance with ASTM C 67 or C 140, as applicable. In the event these test specimens fail to conform to the Specifications, the manufacturer may select new specimens from the same lot for a retest. Failure of this second set to conform to requirements shall be sufficient cause for rejection and removal from the site of the entire lot. Expense of original testing will be borne by the Owner; all subsequent retesting shall be at the expense of the Contractor.
- I. Mock-Up Wall Panel:
1. Construct, on the site where instructed, mock-up panels measuring not less than 32 in. high x 48 in. wide, and of thickness and construction typical of **exterior wall** construction as shown on Drawings, and having incorporated therein all major masonry items (i.e., face brick, concrete masonry units, specified mortars, reinforcing, etc.) The units shall be laid in the same bond or pattern, using the same size and type of joints required in the finished work. Units used shall demonstrate manufacturer's full range of variation in color and finish for each masonry unit to be used on Project. The panel, when accepted by the Architect, shall be a standard of comparison for the grade of materials, quality of workmanship, and precise appearance desired and expected in the finished work, and shall be kept for reference, maintained in satisfactory condition for the duration of the Project, then demolished and removed from the site by the Contractor. Erect mockups adjacent and parallel to existing surface.
  2. Timing:
    - a. Mock-up panels shall be completed a minimum of three weeks prior to the start of laying any masonry.
    - b. Mock-up shall be reviewed two weeks after the mock-up is complete. If any sign of problems appears, masonry construction will be delayed until a mock-up can be constructed which does not show signs of problems.

#### 1.06 Delivery, Storage, and Handling:

- A. Materials shall be stored above and clear of the ground on raised pallets or platforms, and adequately covered and protected from weather, moisture, and other damage.

- B. Cement or lime, partially set, caked, or otherwise deteriorated; masonry sand contaminated by the intrusion of foreign materials; or, cracked, broken, or dirt-encrusted brick and masonry units will be rejected as unfit for use in the work and shall be removed from the site.
- C. Units shall be stored separately at the site according to their particular type or grade designations, and their use in the work.

## **PART-2 PRODUCTS**

### **2.01 Concrete Masonry Units:**

- A. General: Provide shapes indicated and as follows:
  - 1. Unless otherwise indicated, provide corner profile on units to match existing.
  - 2. Units used in exposed surfaces shall be free of chips, cracks, or other defects detrimental to appearance, and shall contain no slag or other aggregates having residual metallic substances causing rust bleed-through of paint finish. Surface texture and finish shall conform to that of the sample unit selected and accepted for use in exposed work.
  - 3. Solid Load-Bearing Units or Fully Grouted Load-Bearing Hollow Units:
    - a. Use for bearing under lintels, beams, and other structural wall bearing members.
- B. Hollow and Solid Load-Bearing Concrete Masonry Units (CMU): ASTM C 90, Type 1, moisture-controlled modular-sized units of nominal 8 in. x 16 in. face dimension and of thickness called for on Drawings or required in the Work. Shall be used for all concrete masonry work, below and above grade, except where other types or grades are specified or otherwise permitted herein.
  - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1,900 psi, unless indicated otherwise.
  - 2. Weight Classification: Normal weight, unless indicated otherwise.
    - a. Provide light weight units for masonry partitions at existing elevated slab locations.

### **2.02 Brick:**

- A. Face Brick: For exterior and interior applications. First quality, hard-burned clay or shale units conforming to ASTM C 216, Grade SW, Type FBS, being of size, shape, texture, and shade range as follows:
  - 1. Selection: Match Existing.
  - 2. Pre-Bid Submittal: Full color range samples of face brick proposed as substitutions to those specified for use in the work shall be submitted to the Architect ten days prior to bid opening date.

### **2.03 Structural Facing Tile (SFT):**

- A. Units shall conform to the specifications of ASTM C 126 or the Facing Tile Institute for Select Sized Quality (Grade SS ground ends).
- B. Match existing SGFT color shading and sizes.

2.04 Mortar and Grout Materials and Mixes:

- A. General: Except where otherwise indicated, mortar and grout materials and mixes shall comply with the requirements of this Article.
- B. Dry ingredients for mortar and grout shall conform to the following:
  - 1. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
  - 2. Hydrated Lime: ASTM C 207, Type S
  - 3. 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, Type S.
  - 4. Masonry Cement: ASTM C 91 (colored)
  - 5. Aggregate for Mortar: ASTM C 144
    - a. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
    - b. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
  - 6. Aggregate for Grout: ASTM C 404
- C. Water shall be clean, potable, and free from deleterious or organic materials.
- D. Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, salts, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated or accepted in writing by the Architect prior to use.
- E. Colored Cement Products: Packaged pre-blended mix made from portland cement and lime, or masonry cement, and mortar pigments, all complying with specified requirements, and containing no other ingredients. Do not add pigments to colored cement products at job-site.
  - 1. Formulate blends as required to produce color(s) indicated or, if not indicated, as selected from manufacturer's standard colors by Architect from manufacturer's samples, and final selection/approval on mock-up panel.
  - 2. Color(s): For new face brick at Kirk MS.
  - 3. Pigments shall not exceed 10 percent of portland cement by weight.
  - 4. Pigments shall not exceed 5 percent of masonry cement by weight.
  - 5. Uses and Acceptable Products:
    - a. Colored Portland Cement-Lime Mix: For use at load-bearing applications of brick and colored CMU; acceptable for use at non-load-bearing applications of brick and colored CMU. Provide one of the following:
      - 1) Capital Materials Corporation; Riverton Portland Cement Lime Custom Color.
      - 2) Lafarge North America Inc.; Eaglebond.
      - 3) Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.
    - b. Colored Masonry Cement: Acceptable for use at non-load-bearing applications of brick and colored CMU. Provide one of the following:
      - 1) Capital Materials Corporation; Flamingo Color Masonry Cement.
      - 2) Essroc, Italcementi Group; Brixment-in-Color.

- 3) Lafarge North America Inc.; Lafarge Custom Color Masonry or Magnolia Masonry Cement.
  - 4) Lehigh Cement Company; Lehigh Custom Color Masonry Cement.
- F. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry:
- 1. Type M (2500 psi) – For masonry below grade or in contact with earth.
  - 2. Type S (1800 psi) – For load-bearing masonry construction other than foundation walls.
  - 3. Type N (750 psi) – For non-load bearing masonry construction, unless indicated otherwise.
- G. Grout for Unit Masonry: Comply with ASTM C 476, minimum 28-day compressive strength of 3,000 psi for all applications unless indicated otherwise.
- 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in 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 as measured according to ASTM C 143. Water-reducing admixtures are not permitted.

#### 2.05 Wall Reinforcement and Masonry Ties:

- A. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one or more of the following:
- 1. Hohmann & Barnard
  - 2. Dur-O-Wal (div. of Hohmann & Barnard)
  - 3. Wire-Bond
  - 4. Heckmann Building Products Inc.
- B. Finish (Reinforcing and Ties):
- 1. Interior Partitions: Mill galvanized, ASTM A 641, Class 1, 0.4 oz. zinc coating per sq. ft.
  - 2. Exterior Walls: Hot-dipped galvanized, ASTM A 153, 1.5 oz. zinc coating per sq. ft.
- C. Horizontal Joint Reinforcement: Provide ASTM A 951 9-gauge deformed rods welded to cross-rods not more than 16 in. on center. Provide reinforcement as follows:
- 1. Single Wythe Walls: Truss or ladder type.
  - 2. Uninsulated Cavity and Composite Walls: Truss type.
  - 3. Insulated Cavity Walls:
    - a. With Brick Veneer: Hohmann & Barnard Lox-All Adjustable Eye-Wire Ladder Type #270 Reinforcing and rectangular Adjustable Wall Ties.
  - 4. Provide prefabricated L- and T-shaped sections, at 8 inches on center vertically, for corners and intersections.
  - 5. Reinforcing width shall be 2 in. less than overall wall thickness.
- D. Reinforcing Steel: Shall be deformed bars conforming to ASTM A 615, Grade 60.

- E. Masonry Anchors: Tie wires shall be not less than 3/16 in. thick; shall be of sufficient length to provide not less than 6 in. masonry embedment; and, of width approximately two less than nominal wall thickness.
1. Masonry to Structural Steel Columns: Provide steel strap anchors as indicated below with adjustable 3/16 in. diameter vee-wire ties.
    - a. For wide flange, tube, or pipe structural steel columns that are NOT to receive spray-on fireproofing, use Hohmann and Barnard #359 or #359C strap anchor, welded or screw-attached to structural steel.
  2. Masonry to Concrete: Dovetail 1 in. x 1 in. x 5/8 in. 22 gauge mill galvanized slots with hot-dipped galvanized dovetailed wire tie. Provide 16 gauge dovetail end to interlock with slot and wire shall be 3/16 in. diameter and sized to extend 1 in. from the face of the veneer.
  3. New Masonry to Existing Masonry: Similar to Slip-Set Stabilizer Style V by Hohmann & Barnard.

#### 2.06 Rigid Insulation for Cavity Wall Assemblies:

- A. Polystyrene Board Insulation: Thickness as noted on Drawings, 16 inches high, R-Value of 5 per inch of thickness, ASTM C 578, Type IV or X, rigid extruded polystyrene boards, and, when tested in accordance with ASTM E 84, shall have a maximum flame-spread and smoke-developed indices of 25 and 450, respectively. Insulation shall be Dow Chemical "Styrofoam" or Owens Corning "Foamular."
- B. Adhesive: Type recommended by insulation board manufacturer for application indicated.

#### 2.07 Embedded Wall Flashings, Joint Fillers, and Accessories:

- A. Unless indicated otherwise, provide flexible sheet flashing made from ethylene-propylene-diene terpolymer (EPDM), complying with ASTM D 4637, 0.040 inch thick. Flashing shall be in rolls of appropriate width for each application. Use preformed shapes at corners. Provide one of the following, with primers, adhesives, sealants, extruded aluminum termination bars (1" wide by 1/8" thick minimum), and other accessories as recommended by manufacturer:
1. Carlisle Coatings & Waterproofing; Pre-Kleened EPDM Thru-Wall Flashing.
  2. Firestone Building Products; FlashGuard.
  3. Heckmann Building Products Inc.; No. 81 EPDM Thru-Wall Flashing.
- B. Metal Wall Flashing and Drip Edges: AISI Type 304, 18-8 soft temper stainless steel, 2-D finish, 0.0156 in. thickness; having sawtooth or dovetail mortar bonding ribs formed in sheets; formed to configuration shown; extend to outside with 1/2 in. hemmed drip. Lap joints 4 in. and seal with asphaltic cement. Comply with SMACNA recommendations. Provide where indicated.
1. Metal Drip Edges: Provide factory-formed 2-inch wide stainless steel drip edge continuously at all horizontal joints in exterior veneer immediately beneath weeps. This stainless steel drip edge is not required where weeps are directly above cast stone sills, or where other metal flashing is noted.

- C. Weep Vents: Provide cellular vents, 3/8 inch wide x 2-1/2 in. tall x 3-3/8 in long, resistant to ultraviolet light. Vents shall be clear or grey as selected by the Architect. Provide one of the following:
1. QV Quadro-Vent by Hohmann & Barnard
  2. Cell Vent by Dur-O-Wall
  3. Cell Vent by Masonry Reinforcing Corporation of America
  4. Mortar Maze Weep Vents by Advanced Building Products
- D. Cavity Drainage Mesh: Synthetic mesh, 10 inches high x depth of cavity, designed and manufactured specifically to stop stray mortar droppings from blocking proper moisture migration at bottom of cavity. Provide one of the following:
1. Mortar Break or Mortar Break II, by Advanced Building Products
  2. Mortar Net by Mortar Net USA, Wire Bond, Hohmann & Barnard or Dur-O-Wal.
- E. Compressible Filler at Top of Masonry Veneer: 1/4" x 2-3/4" closed cell neoprene equal to Wire-Bond #3300 Horizontal.

#### 2.08 Moisture Barrier Coating:

- A. Provide moisture barrier coating on outer face of all concrete block back-up wythe in cavity walls. Product shall be W. R. Meadows Sealmastic Emulsion or Karnak 220AF Fibered Emulsion Dampproofing.

### PART-3 EXECUTION

#### 3.01 Erection - General:

- A. Lay out and erect the work plumb, level, and true to line in accurately spaced 8 in. vertical and 16 in. horizontal coursing modules, attaining maximum usage of whole uncut units. Use no units shorter than 1/2 unit length at vertical corners and jambs. Keep bond pattern plumb and in alignment full height of wall. Generally, units shall be laid to break joint by 1/2 length of preceding courses.
1. Face Brick Bond Pattern: Match existing.
  2. CMU Bond Pattern: Match existing.
  3. SGFT Bond Pattern: Match existing.
- B. Finished appearance of the outer faces of exposed masonry surfaces shall be of prime consideration. Lay all units to line along the exposed face. Face units shall be selected for uniformity of texture and shall be free of chips, cracks, or other defects. No "shiners" or patching will be permitted in face work. Damaged units or units misaligned from the plane of the exposed face shall be removed and replaced.
- C. No hammer-cutting will be permitted.
- D. Units shall be dry when laid, except clay brick having an absorption rate in excess of 0.7 oz. per min. shall be wetted sufficiently so that the absorption rate, when laid, does not exceed this amount.

- E. Adjust all units to their final position while mortar is soft and plastic. Remove any units disturbed after mortar has stiffened, clean joints, and relay with fresh mortar.
- F. Lay hollow units with full mortar bedding on horizontal and vertical face shells. Units used in foundation walls, piers, pilasters, or next to grout or concrete filled cells shall be fully bedded on both face shells and webs. Solid units shall be laid in full unfurrowed horizontal and vertical mortar bedding.
- G. Where necessary for construction purposes to stop-off horizontal runs of masonry, rack back 1/2 unit length in each course. Toothing in new work will not be permitted. Exposed surfaces of set or partially set masonry shall be cleaned and lightly wetted to obtain best possible bond before joining with fresh masonry.
- H. Maintain a minimum of 3/8 inch clearance between masonry and steel columns or fireproofing on steel columns. Do not bond masonry to structural steel except with adjustable ties.
- I. Bearing walls supporting structural members shall have not less than three full courses, or 24 inches, of solid masonry units immediately under the bearing level of steel beams. Provide 8 inches solid masonry under bearing ends of short span joist.
- J. Where hollow core concrete block walls decrease in thickness, a course of solid masonry or concrete-filled units shall be interposed between the thicker and thinner sections regardless of whether shown on the Drawings or not.
- K. Chases and recesses, of sizes and locations predetermined by consultation with other trades, shall be built-in and not cut-in. Build chases plumb, free of internal projections, and at least one full unit length from jamb openings. Exposed concrete units shall have cells threaded over conduit; no face cutting will be permitted. Horizontal "in-wall" piping shall be enclosed within the units in neatly fitted horizontal chases saw-cut into the webs; hammer-cutting shall be avoided. Units shall be saw-cut, closely fitted, and grouted-in around the work of other trades projecting through or exposed in the face of the wall. Bolts, anchors, accessories, flashings, and other built-in items shall be solidly grouted and built-in as the work progresses. Door frames shall be filled solid with grout as the wall is built-up. Joints around windows, door frames, and elsewhere where caulking is called for shall be raked to receive sealant.
- L. Unless indicated otherwise on Drawings, extend interior masonry partitions full height to underside of structure of floor or roof construction above. Similarly, masonry that encases steel columns shall be carried full height of column to the underside of floor or roof deck above. Permanently close joint between top of walls and floor or roof construction above with gasket or other material acceptable to Architect; such closure shall be fire-rated where partition is required to be fire-resistance rated.
- M. Abutting walls shall be bonded or anchored at their points of intersection. Bearing walls shall have alternate courses toothed into adjoining wall or, with Architect's review, rigid steel anchors set at maximum 48 in. vertical centers may be used, in lieu of toothed bonding. Non-bearing partitions shall be bonded to abutting walls with continuous joint reinforcement. Walls intersecting or adjoining structural framing and dependent upon this framing for lateral support shall be anchored to structural members with flexible metal anchors or ties.
- N. New masonry work constructed as a continuation or extension of existing walls, with its face aligned on the same plane as that of the existing work to which it adjoins, and which face surface will be exposed as a final finished surface in the finished work shall be toothed and bonded into

the existing work. New openings cut into existing similarly exposed finish masonry shall, likewise, have the new masonry toothed into the existing work.

- O. Existing loose masonry units shall be removed from existing walls which receive or adjoin new masonry work. Clean head and bed joints of existing residual mortar and lightly wet down the surfaces before tying or joining new work into existing work.

### 3.02 Exterior Cavity Wall Construction:

- A. Double-Wythe Masonry Cavity Walls: Construct of two separate masonry wythes with drainage cavity (air space) and rigid insulation between, as shown on Drawings, erected concurrently in lifts to meet and coincide with spacing of wall reinforcing.
  - 1. Masonry cavity wall construction and insulation shall extend a minimum of 8" below finished grade, unless otherwise shown.
  - 2. Provide moisture barrier coating on outer face of all concrete block back-up wythe in cavity walls. Spray, brush or trowel apply as suited to conditions.
    - a. Proceed with coating only after substrate construction and penetrating work have been completed and unsatisfactory conditions have been corrected.
    - b. Mask or otherwise protect adjoining exposed surfaces from being stained, spotted, or coated with coating material. Prevent coating materials from entering and clogging weep holes and drains.
    - c. Comply with manufacturer's written recommendations unless more stringent requirements are indicated or required by Project conditions to ensure satisfactory performance of moisture barrier coating.
    - d. Apply coating to provide continuous plane of protection on exterior face of inner wythe of exterior masonry cavity walls.
- B. Cavity Wall Construction – General:
  - 1. Prepare surfaces, including priming where recommended for adhesive attachment by flashing manufacturer, and install cavity flashing where indicated, without excessive stretching or sag, in accordance with flashing manufacturer's installation instructions. Permanently secure flashing edges to inner wythe or other back-up wall construction.
  - 2. Except where other impervious materials are indicated, provide flashing as a permanent water barrier over expansion joints and joints between dissimilar materials, at inner wall cavity face.
  - 3. Install flashing to provide downward drainage in cavities to points of discharge to the exterior via weep vents and thru-wall flashing embedded in the outer wythe.
  - 4. Run flashing in unspliced widths along and over the substrate being covered. Provide edge and end dams where applicable. To the maximum extent practicable, use preformed corner shapes. Lap adjoining sections of flashing at least 6 inches and seal with cement.
  - 5. Install rigid insulation board continuously (full height and width) over inner wall face of all exterior wall cavities. Spot cement to the face of the inner wall with horizontal board joints coinciding with the 16 inch vertical spacing of masonry reinforcing/ anchors. Stagger vertical board joints. Butt all joints tight, and fit boards tight around wall protrusions. Chipped or broken board shall not be used in the work.
  - 6. Install cavity drainage mesh, of appropriate thickness and configuration, continuously and immediately above flashing at levels of discharge, in accordance with mesh manufacturer's instructions.
  - 7. Install stainless steel drip edges at outer face of veneer directly beneath membrane thru-wall flashing and weeps. Overlap sections of drip edge by 4 inches and seal laps. Adhere membrane thru-wall flashing to top surface of drip edge in bed joint, and cut off

membrane flashing approximately 1/2-inch back from outside face of veneer. Drip edge is not required where weeps are directly above cast stone sills, or where metal flashing is otherwise noted.

8. Provide weep vents at each level of cavity drainage discharge, at 24 inches o/c for brick veneer and 32 inches o/c for concrete masonry veneer, immediately above thru-wall flashing embedded in outer wythe.
  9. Masonry joints facing cavity shall be cut flush. Keep cavities free of mortar droppings by use of wire-suspended, cavity-width wood slats, which shall be removed and cleaned after construction of each lift. If subsequent and periodic in-place checks conducted by the Architect or other observers indicate these cavities are choked by mortar, thus impairing their intended function and efficiency, the non-conforming walls shall be dismantled and rebuilt by the Contractor at his own cost and expense. Installation of cavity drainage mesh does not relieve the Contractor of this requirement to maintain cavities free of mortar droppings.
- C. Through-Wall Flashing: Provide horizontally continuous thru-wall flashing over heads of openings, at beams that block the drainage cavity, at base of walls above finish grade, and at locations as shown on the Drawings. Spandrel and sill flashing, where required, shall be provided in similar fashion.
1. At masonry inner wythes, secure inside/ topmost edge of flashing by embedding it at least 4 inches into a horizontal joint.
  2. Where indicated, or where unable to turn inside/ topmost edge of flashing into a horizontal joint, secure with continuous termination bar to face of substrate and seal top edge.
  3. Except as otherwise indicated or approved, thru-wall flashing shall extend down a minimum of 8 inches vertically before turning out horizontally at level of discharge.
  4. At levels of discharge, extend flashing outward and perpendicular to the wall plane, with sufficient tension to avoid sagging across the cavity, and embed it in horizontal joint of the masonry veneer. Where metal drip edge is required (see 3.02-B.7 above), adhere 1-inch width of leading edge to top surface of metal drip edge. Leading edge of membrane flashing shall terminate approximately 1/2-inch back from outer face of veneer.
    - a. Unless indicated otherwise, lowest course of thru-wall cavity flashing shall extend through the exterior wythe at a horizontal joint above, but within 8 inches, of the finished grade.
    - b. Where air cavity occurs below level of drainage discharge, provide 4-inch high continuous strip of additional rigid insulation, in a thickness matching the air cavity. Position strip directly below flashing, to support flashing, and adhere to primary layer of rigid insulation.

### 3.03 Mortars:

- A. Mortar ingredients shall be thoroughly mixed together in a mechanically-operated batch mixer for a period of not less than three-minute duration. Mixing time for colored mortar shall be extended to seven minutes, or for such time length as the manufacturer recommends, to ensure thorough dispersion of color pigment throughout the mix.
- B. Mortar materials shall be used within 2-1/2 hours of initial mixing. Mortar shall be of consistency convenient to its satisfactory use in the work, and may be retempered to plastic workability by remixing with additional water when beginning to stiffen from evaporation or absorption of a part of the mixing water. Retempering and use of mortar which has begun to set from chemical reaction will not be permitted.

- C. Equipment used for mixing, transporting, and holding of mortar shall be clean and free of hardened mortar or other foreign matter.

### 3.04 Wall Reinforcement:

#### A. Horizontal Joint Reinforcement:

1. Install in masonry wall bed joints at 16 in. o.c. Reinforcement shall, in addition, be placed in bed joints, 8 in. apart, immediately above lintels and below sills at window and door openings.
2. Install continuously in walls, with side rods lapped at least 6 in. at splices and continually maintained at abutting walls and around corners by use of prefabricated or job-fabricated tee and corner sections. Continuity shall be interrupted only at vertical expansion and control joints.

#### B. Vertical Reinforcement:

1. Exterior walls shall contain vertical reinforcing as indicated on the Drawings. Reinforcing shall be cleaned of loose rust, mill scale, and other materials which will reduce bond to mortar or grout. Position reinforcing accurately at the spacing indicated locating the bars at the center of the block wythe. Lap splices shall be a minimum of **48** bar diameters. Reinforcing to be in place before grouting.
2. Fill cells containing vertical reinforcing with grout for their full height. Grout pours shall be limited to 5 ft. height if no clean-out holes are used, or 10 ft. height if clean-out holes are used. Place grout by pumping into grout spaces, unless alternate methods are acceptable to Architect. Provide clean-out holes in first course at vertical cells which are to be filled with grout.

### 3.05 Bond Beam Units:

- A. Provide bond beam units at all locations shown on Drawings and for horizontal pipe or conduit chases. Units shall be of texture to match face units. Fill channel cavity full with grout and two #4 reinforcing bars, unless indicated otherwise.

### 3.06 Lintels:

- A. General: Build in lintels as work progresses. Anchor lintels as indicated. Unless otherwise indicated, lintels shall have a minimum 8 inches of bearing at each end.
  1. Refer to notations and Lintel Schedule(s) on Structural Drawings for lintel sizes and configurations.

### 3.07 Ties:

- A. Anchor masonry walls to structural frame at points of juncture by means of flexible wall ties of type which provides lateral restraint while permitting horizontal and vertical movement. Place ties at 16 in. o.c. in alternate joints between wall reinforcement, and secure to structural framing by means of welding or "shot-in" anchoring devices employing power-actuated equipment.
- B. Space ties for face masonry with masonry backup not more than 16 in. o.c. horizontally and 16 in. o.c. vertically.
- C. Space ties for face masonry with steel stud backup 16 in. o.c. horizontally and 16 in. o.c. vertically, anchored securely to steel studs with galvanized drywall screws.

3.08 Tooling:

- A. Exposed masonry joints shall be progressively tooled as the mortar takes its initial set. Mortar shall be compacted tightly into the joints to close cracks and crevices by use of tooling irons of profile to produce a round concave joint. Joints unexposed in the finish work shall be cut flush. Holes in joints of exposed masonry surfaces shall be filled with mortar and suitably tooled.
- B. Unless otherwise indicated, tool joints to the following profiles:
  - 1. Brick Joints: Match existing.
  - 2. Concrete Masonry Joints: Match existing.
  - 3. SGFT: Match existing.

3.09 Cleaning New and Repaired Masonry:

- A. Masonry walls shall be kept reasonably clean, with faces stone-rubbed free of protruding and mislaid mortar as the work progresses.
- B. At completion of the work, and after pointing has hardened, exposed face brick surfaces shall be wetted and scrubbed clean with stiff fiber brushes, then thoroughly rinsed with clear water, and left clean and tight jointed. Use commercial cleaning agents such as "Sure-Kleen" in accordance with masonry manufacturer's instructions.
- C. Block walls shall be rubbed down and dry brushed clean to acceptable paintable condition.

3.10 Control Joints:

- A. Construct vertical control joints in walls and partitions at locations shown on Drawings, or, if not shown, as directed by Architect in accordance with guidelines of Article 3.02 "Masonry Erection - General." Joint locations shall generally correlate with other building elements and, unless shown or directed otherwise, shall extend from top of foundation below grade to the full height of the exposed wall surface. Unless indicated otherwise, do not run rigid horizontal joint reinforcement through vertical control joints. Prepare for sealant and backing material application, specified in Division 7 Section "Joint Sealants."
  - 1. For brick work, control joints shall be laid up open, free of mortar droppings or protrusions, with mortar joints cut flush along the concealed joint faces.

3.11 Cold Weather Construction:

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- B. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

3.12 Hot Weather Construction:

- A. Comply with "Technical Note No. 1," Revised March 1992, by the Brick Industry Association (formerly the Brick Institute of America) and comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

3.13 Field Quality Control:

- A. Testing and Inspecting:
  - 1. Except as indicated otherwise, Contractor shall engage and pay a qualified independent testing and inspecting agency to perform indicated field tests and inspections and to prepare test reports:
  - 2. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
  - 3. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.
  - 4. Testing and inspection agency will report inspection results promptly and in writing to Owner, Contractor, and Architect.
  - 5. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or other corrective work with specified requirements.
- B. Inspections shall be conducted in compliance with the 2009 International Building Code, Sections 1704.5, Sub-section 1704.5.2, and Table 1704.5.1 "Level I Special Inspection." Inspections shall be periodic or continuous in conformance with the Table. See Structural Drawing S1.1 for additional information on special inspections.
- C. Testing Frequency: One set of tests shall be performed during construction for each 5000 sq. ft. of wall area or portion thereof.
- D. Mortar Test: For each mix provided, mortar shall be sampled and tested per ASTM C 780 for compressive strength.
- E. Grout Test: For each mix provided, grout shall be sampled and tested per ASTM C 1019 for compressive strength.

3.14 Protection of Work:

- A. During erection, the tops of all walls shall be kept dry and free of moisture penetration by covering at the end of each day or shut-down period, with a strong, continuous, waterproof membrane, firmly secured in position and of sufficient width to overhang at least 1 ft. on each side of the wall.
- B. Masonry walls of which the faces will be exposed in the finished work shall be protected against mud staining or other similar circumstance by use of an impervious protective barrier, similar to polyethylene film, minimum 6 mil thickness, applied to walls after their erection. This barrier shall extend at least 24 in. up the wall above grade level and shall remain in place during the construction period, to be removed only after threat of staining no longer exists.

END OF SECTION 042000

## SECTION 055000 - METAL FABRICATIONS

### PART-1 GENERAL

#### 1.01 Summary:

- A. This Section includes:
  - 1. Miscellaneous steel framing and supports.

#### 1.02 Submittals:

- A. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of fabrications and their connections. Indicate location, type, and size of fastenings. Show anchorage and accessory items. Distinguish between shop and field connections.
  - 1. Provide templates for anchors and bolts specified for installation under other Sections.
  - 2. Contractor shall check and verify all dimensions for proper fit of parts.
  - 3. Review by the Architect relates to the requirements for general arrangement and design, and does not relieve the Contractor of responsibility for errors in details, dimensions, or quantity of materials.
- B. Welding Certificates: Copies of certificates for welding procedures and personnel.

#### 1.03 Quality Assurance:

- A. Fabricator Qualifications: A firm or firms experienced in producing metal fabrications 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. Fabrication and installation shall be performed by experienced personnel and qualified welders in accordance with accepted industry standards as established by the National Association of Architectural Metal Manufacturers (NAAMM).
- B. Welding: Qualify procedures and personnel according to American Welding Society (AWS) D1.1 "Structural Welding Code--Steel," and AWS D1.3 "Structural Welding Code--Sheet Steel." Certify that each welder has passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

#### 1.04 Storage:

- A. All items, when delivered to the site, shall be stored in a safe place, clear of the ground, and protected with weatherproof covering until installed.

#### 1.05 Project Conditions - Field Measurements:

- A. Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measuring before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.06 Coordination:

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

PART-2 PRODUCTS2.01 Materials - General:

- A. All materials shall be new, clean, undamaged, unruled stock of sizes and weights indicated.
- B. Metal Surfaces - General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Components identified as products of certain manufacturers are so named to establish the minimum acceptable quality and design. Furnished components shall be equal to or better than the named items.

2.02 Ferrous Metals:

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Malleable Iron Castings: ASTM A 47, Grade 32510.

2.03 Paints:

- A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements of FS TT-P-664; selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated, and for capability to provide a sound foundation for field-applied topcoats, despite prolonged exposure.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint for regalanizing welds in steel, complying with SSPC-Paint 20.

2.04 Fasteners:

- A. Furnish all required bolts, spacers, washers, and mechanical fastening devices for erection. Bolts, where exposed, shall be Phillips-head machine screws, except hex head machine screws will be permitted for pipe rail installation.

2.05 Fabrication - General:

- A. Fabrication shall be in as large shop-assembled sections as large as practical for delivery and erection.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight edges. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing the Work.

- C. Cut, reinforce, drill, and tap metal fabrications as indicated and as needed to receive screws and similar items.
- D. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate and drain.
- E. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use fasteners of type indicated or, if not indicated, Phillips-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- F. Provide for anchorage of type indicated; coordinate with supporting structure or material.
- G. Welding: Weld corners and seams continuously to comply 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. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- H. Finishing:
  - 1. Unless otherwise indicated, ferrous metal items **without** outside exposure, located in interior walls, or to be embedded in interior concrete work, shall receive one coat of shop primer after being cleaned of grease, flux and weld spatters. Prepare items for shop priming in compliance with SSPC-SP 3 and apply shop primer in compliance with SSPC-PA 1.
  - 2. Ferrous metal items with outside exposure, located in exterior walls, or to be embedded in exterior concrete work, shall be hot-dipped galvanized per ASTM A 123.
  - 3. Stainless steel and aluminum items shall be finished as indicated elsewhere.
  - 4. Finishes, as applied, shall meet federal, state, and local V.O.C. requirements.

#### 2.06 Miscellaneous Steel Framing and Supports:

- A. Provide sway bracing, hanger assemblies, clips, and other steel items required to support partitions, entrances, and similar assemblies or equipment. Fabricate to sizes and details shown on Drawings and field verified dimensions.
- B. Where indicated, provide steel framing, fabricated to the size and detail required, to accommodate and support roof-mounted accessories or equipment such as roof hatches and mechanical equipment. Fabricate frames with coped or mitred corners, welded joints, and welds ground smooth. Provide shop-punched bolt holes for mounting frames to deck or for attachment of wood blocking or curbs.
- C. Coordinate with equipment manufacturer's requirements. Steel members shall be of size and shape shown in details, but in no case less than that required to safely support anticipated loads thereon. Connections shall, generally, be welded, except where bolting is called for or where bolting is more adaptable and practical in fabrication and erection. Members shall have shop-prepared bolt holes where required for field assembly, installation, or attachment of other materials, clip angles, or miscellaneous loose pieces of length, size, type, and quantity indicated or required to complete the Work.

### PART-3 EXECUTION

#### 3.01 Installation - General:

- A. Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction.
- B. Perform cutting, drilling, and fitting required for installing metal fabrications. Set fabrications accurately in location, alignment, and elevation, with edges and surfaces level, plumb, true, and free of rack. Measure from established lines and levels.
- C. Provide temporary bracing or anchors for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld ferrous metal connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized or clear anodized after fabrication and are for bolted or screwed field connections.
- E. Field welding shall generally comply with same requirements as for shop fabrication welding.

#### 3.02 Miscellaneous Steel Framing and Supports:

- A. Install to comply with requirements of items being supported, including equipment manufacturer's written instructions and requirements on shop drawings, if any.

#### 3.03 Touch-Up and Cleaning:

- A. Touch-up Painting: Immediately after erection of shop primed items, clean field welds, bolted connections, and abraded areas of shop paint, then paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touching-up shop-painted surfaces. Apply by brush or spray to provide a 2.0 mil minimum dry film thickness.
- B. For galvanized surfaces, clean welds, bolted connections, and abraded areas, then apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

## SECTION 072100 - THERMAL INSULATIONS

### PART-1 GENERAL

#### 1.01 Summary:

- A. This Section includes the following:
  - 1. Rigid foam plastic insulation for perimeter of building under slabs-on-grade, between foundation walls and backfill.
  - 2. Spray foam insulation to fill gaps between head of exterior walls and roof deck.
- B. Related work specified in other Sections:
  - 1. Division 4 Section "Unit Masonry Assemblies" for rigid insulation installed in masonry cavity walls and masonry cells.
  - 2. Division 7 Roofing Section(s) for roof insulation.
- C. Coordinate the types of insulation specified in this Section with the Work of the following Sections:
  - 1. Division 3 Section "Cast-in-Place Concrete."
  - 2. Division 5 Section "Cold-Formed Metal Framing."

#### 1.02 Submittals:

- A. Product Data: Manufacturer's complete technical literature and installation instructions for each type of product and application required.
  - 1. Submit ICC ESR Report for spray foam insulation showing compliance with testing pertinent to the applications required for this Project.

#### 1.03 Quality Assurance:

- A. Source Limitations: Obtain each type of building insulation through one source.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, 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. (For insulation that is part of a fire-resistance rated assembly.

#### 1.04 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

### 2.01 Manufacturers:

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Extruded-Polystyrene Board Insulation:
    - a. Dow Chemical Company.
    - b. Owens Corning.
  2. Spray Foam Insulation:
    - a. Dow Chemical Company
    - b. Alternative manufacturer providing compliant product approved for required applications.

### 2.02 Insulating 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.
  2. Provide with accessories, such as adhesive, approved by insulation manufacturer for securing, attaching or bonding insulation.
- B. Rigid Polystyrene Insulation: Extruded-polystyrene board insulation complying with ASTM C 578, of type, density and dimensions indicated for the rigid insulation applications below. Insulation shall have smooth surfaces and edges, a minimum aged R-value of 5.0 per in. of thickness when tested at 75 degrees F mean temperature, and maximum flame-spread and smoke-developed indices of 75 and 450, respectively:
1. Type IV, 1.60 lb/cu. ft., 2 in. thick x 24 in. wide; wider units may be used if practical.
- C. Spray Foam Insulation: ASTM C 1029, Type II, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84. Provide spray-on closed-cell polyurethane insulation with an R-value no less than 6 per inch of thickness, for application to seal voids between roof deck and exterior walls, and other locations indicated or authorized. Spray foam insulation shall comply with IBC plastic foam insulation requirements for each different application, including exposure as an interior finish where located above suspended ceilings. Provide closure accessories, dams, and thermal (fire) barrier coating approved by insulation manufacturer and testing, as necessary to achieve Code compliance.

1. Available Products: Froth-Pak Foam Insulation by Dow Chemical, which is approved per NFPA 286 testing for exposure in non-fire-resistant rated roof/wall junctures, maximum 6" high and 2" deep (x unlimited width).

### PART-3 EXECUTION

#### 3.01 Examination:

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.02 Preparation:

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

#### 3.03 Installation – General:

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left 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. Water-Piping Coordination: If water piping is located on interior of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
- E. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

#### 3.04 Foundation Perimeter Insulation:

- A. Install insulation full-width and in longest practical lengths continuously along the inner face of all new exterior building walls, around the entire building perimeter, and under all floor slabs abutting these walls. Extend insulation to greater than 24 in. width or depth where called for on Drawings.

#### 3.05 Spray Foam Insulation:

- A. Apply spray-applied insulation according to manufacturer's written instructions. Do not apply insulation until installation of other work in the gaps, joints or voids is complete. Mask or otherwise protect adjacent and nearby work from contact with spray foam. Clean up after installation.

1. Miscellaneous Voids: Install insulation in voids between heads of exterior walls and roof deck above, and other miscellaneous cavity spaces where indicated or required to prevent gaps in insulation.

3.06 Protection:

- A. 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

SECTION 075113 - BUILT-UP ASPHALT ROOFING AND FLASHINGPART-1 GENERAL1.01 Summary:

- A. This Section covers materials and application of hot-applied built-up asphalt roofing with gravel surface, flexible flashings, furnishing and installation of equipment supports, metal gravel stop, downspout and header box, and work incidental thereto required to complete and provide a watertight roofing system over all roof surfaces in the Work.
- B. New built-up roof materials and construction shall comply with Factory Mutual Class 1-90 rating requirements.

1.02 Submittals:

- A. Contractor's Certification: Furnish to Owner a certified written statement that roof deck, roof insulation, flashing attachments, and all other conditions have been met as required to produce bondable or guaranteed roofing and flashing application, and is in compliance with FM or UL classification requirements, all as have been included in these Specifications and/or indicated on the Drawings, or both.
- B. Product Data: Manufacturer's technical data sheets for each material and BUR system sheet.
- C. Shop Drawings: For metal gravel stop, downspout and header box.

1.03 Quality Assurance:

- A. Installer Qualifications: A roofing firm with a minimum five years specializing in the installation of roofing similar to that required for this Project, whose personnel are approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product. Roofing Installer shall have installed a minimum of 1,000 squares of hot-applied asphalt BUR roofing manufactured by the roofing manufacturer proposed and accepted for use on this Project.

1.04 Materials Storage:

- A. All roofing materials shall be dry when delivered and shall be well protected to remain thoroughly dry while stored at site. Felts and insulation shall be stored on pallets well clear of the ground and in a manner to protect the integrity of product as manufactured. All materials shall be dry at time of installation.

1.05 Deck Condition:

- A. No roofing shall be applied until all roof-mounted or deck protruding items have been installed in their final position, and the general condition and acceptability of the deck surface to be covered has been determined by examination. Deck shall be thoroughly clean and dry. Commencement of roofing application shall constitute acceptance of deck surfaces by roofing applicator.

1.06 Roof Service Guarantee:

- A. Contractor shall furnish to Owner a Roof Service Guarantee, of unlimited financial liability, provided by approved manufacturer or other approved surety, and prepared in such form and substance as is hereinafter specified and agreeable to Owner. Service Guarantee shall provide for prompt repair, at no cost to Owner, of any failure or fault in roofing membrane and/or flashing

membrane, by any cause other than structural building failure, natural disaster, alteration or repair of membrane in a manner unprescribed by Guarantor, or change in original principal usage of building without Guarantor's knowledge and consent, for a period of **15 years** from date of completion and Owner's acceptance of roof. Guarantee shall also provide Guarantor's inspection of roof during installation, at completion, and again two years thereafter. All costs for inspections and covered repairs shall be borne by Guarantor.

## PART-2 PRODUCTS

### 2.01 Performance Requirements:

- A. General: Install membrane roofing system, including roof membrane, flexible and metal roof edge trim, that is watertight; will not permit the passage of liquid water; and will withstand wind loads, thermally induced movement, and exposure to weather without failure. Slope roofing downward to drainage point(s).
- B. Material Compatibility: Provide roofing materials that are compatible with one another, and with existing construction where adjoining, under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

### 2.02 Materials:

- A. Roofing materials shall be high-grade products of an established and reputable manufacturer. Materials shall be manufactured by Johns-Manville Corporation, used herein as Basis-of-Design, or a system meeting these requirements manufactured by Firestone, GAF Corporation, or Tremco.
- B. Roofing and flashing systems shall consist of the following materials installed in minimum stated quantities per each 100 sq. ft. of roof area:
  - 1. Roofing Membrane:
    - a. Base Sheet: Glass fiber, asphalt-coated, ASTM D4601, Type II.
    - b. Roofing Felts: Three plies, ASTM 2178, Type IV.
    - c. Cement between Plies: Steep asphalt, 75 lbs. per ply to 25 lbs. per ply.
    - d. Top Coating: Dead level asphalt, 60 lbs.
    - e. Surfacing: 1/4 in. to 5/8 in. crushed and washed white marble chips, Feldspar, or Texas Limestone, 400 lbs.
  - 2. Insulation: As indicated on Drawings; composite of polyiso and 1/2" fiberboard.
  - 3. Mechanical Fasteners: Grefco Perma-Fasteners, Lexsuco Clips, or Berryfast Insulafast System.
  - 4. Insulation Adhesive: "Bar-Fire" adhesive.
  - 5. Base Flashing:
    - a. Cement: Elastigum Roofer's Cement, 35 lbs. per layer.
    - b. Base Sheet: 1 layer; same as membrane base sheet.
    - c. Cap Sheet: Flashing sheet, 1 layer.
    - d. Coating: Fibrated aluminum roof coating, 1 brush coat.

- C. Wood Lumber for Nailers/Blocking: Southern yellow pine, not less than "Construction Grade," minimum 1500 f, MC19 after pressure treatment, S4S, produced under the grading rules of the Southern Pine Inspection Bureau (SPIB) for preservative treated lumber.
  - 1. Preservative Treatment by Pressure Process: AWPAC U1; Use Category UC3b for exterior construction not in contact with the ground.
    - a. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use ACQ preservatives.
  - 2. Fasteners: Hot dip galvanized steel or stainless steel anchor bolts.

### 2.03 Gravel Stop, Downspout and Header Box:

- A. A complete gravel stop which forms integral fascia system, consisting of .062 extruded aluminum fascia, galvanized water dam, rocker flashings, joint covers, welded corners, and other required components shall be furnished and installed as indicated. Fascia shall be clear anodized finish to match existing; field verify. Installation shall be performed in strict compliance with manufacturer's printed instructions. Gravel stop shall be W. P. Hickman Company's Water Dam System with extruded fascia, or product meeting requirements manufactured by Metal-Era, or M M Systems Corporation.
  - 1. Fascia Accessories: .050 clear anodized aluminum downspout scupper with conductor head and downspout adapters and perforated screens.
  - 2. Downspout material shall be clear anodized of same material as conductor head, and size and configuration as indicated on Drawing. Offset from wall and coordinate with boot for connection to underground storm system. Secure to wall at no greater than 6'-0" intervals.

## PART-3 EXECUTION

### 3.01 Reference Specifications:

- A. Roofing shall be installed in accordance with printed roofing Specification "4GIG" of Johns-Manville.

### 3.02 Preparation:

- A. Install wood nailers/ blocking to which roofing work is attached. Firmly anchor to resist a force of 200 lbs. per linear ft. in any direction. The thickness of perimeter nailers shall be such that the top of the nailer is flush with the surface to which the membrane is attached at the horizontal plane; coordinate with roofing system details.

### 3.03 Insulation Installation:

- A. Install roof insulation in-place with mechanical fasteners or embedded in a full mopping of adhesive; however, all insulation panels within 4 ft. of outer edge of entire periphery of roof shall be secured in-place with mechanical fasteners. Use not less than six fasteners per panel, spaced in a pattern providing one fastener per each 2 sq. ft. of panel area. Mechanical fasteners may be used for all panels in lieu of specified adhesive. Lay in parallel courses. Stagger end joints in adjoining courses; butt each panel tightly to adjoining panels. Stagger joints in each layer with those of layer below. Discard damaged panels.

- B. Install in any one day only as much insulation as can be completely protected by waterproofing membrane that same day. Temporary water cut-offs shall be installed at completion of each day's work and shall be completely removed upon resumption of work.

#### 3.04 Roofing Application:

- A. Starting at the low point, apply one ply of Vaporbar GB Base Sheet to the insulation with two rows of hot asphalt spot moppings approximately 12 in. in diameter and 24 in. on center. The rows of spot moppings should be centered approximately 8 in. in from both edges of the base sheet. Stagger each row of spot mopping. Lap each sheet 2 in. minimum over underlying sheet. Lap ends 3 in. minimum.
- B. Starting at the low point, embed three plies of Celo-Glass Ply Sheet in uniform moppings of hot asphalt (25 lbs. per ply per sq.). Use starting strips cut 12 in. and 24 in. wide, followed by full width sheets. Lap each sheet 24-2/3 in. over the preceding sheet and embed full width of sheet in a coating of asphalt (18 lbs. to 30 lbs. per sq.), so that felt does not touch felt. Lap ends 3 in. minimum. Broom-in ply sheets with a soft broom or squeegee.
- C. Extend roofing sheets up face of cant and cut off evenly at wall line.
- D. On inclines 1 in. per ft. or more, back-nail all plies in accordance with manufacturer's recommendations.
- E. Over entire surface, apply a uniform top pouring of asphalt (50 lbs. to 70 lbs. per sq.) into which surfacing material is embedded.
- F. Over entire roof surface, pour a uniform top coating into which, while hot, firmly embed specified surfacing aggregate at a rate of 400 lbs. per 100 sq. ft. If, for any reason, surfacing aggregate cannot be applied immediately after final felt plies are installed, roof surface shall receive a temporary glaze coating of asphalt.
- G. Tie into existing adjoining BUR roofing in accordance with manufacturer's instructions.

#### 3.05 Base Flashing and Installation:

- A. Base flashing system shall be applied at all roof curbs, hatches, and similar projections. Base flashing shall be built-up of two separate successive plies of specified base and cap sheet, respectively, with each ply fully bedded in a uniform coating of roof cement, applied at a rate of 35 lbs. per layer, and continuous coating of specified fibrated aluminum roof coating, all according to AB-20 Plus Specification. Base flashing shall extend from a distance of at least 3 in. from base of cant out onto roof, over face of cant, and up wall surface, terminating where the metal cap flashing enters wall.

#### 3.06 Metal Flashings:

- A. Metal roof flashings shall be of following types and thicknesses, unless otherwise noted, of AISI Type 304, 18-8 soft temper stainless steel, 2-D finish:
  - 1. Miscellaneous Flashings: All pitch pockets and miscellaneous flashings shall be 0.015 in. 304 stainless steel, formed to details indicated on Drawings. Electrical conduit shall be counterflashed with shop fabricated apron, as detailed, secured in-place by metal draw band. All roof-mounted flashings shall be set in roof cement.

2. Fabrication shall be accomplished on suitable shop equipment with all breaks, inter-locks, and similar bends neat and snug fitting. Joints shall be soldered or otherwise waterproofed in manner acceptable to the Architect.

3.07 Gravel Stop, Downspout and Header Box:

- A. Assemble and install in accordance with manufacturer's instructions.

END OF SECTION

## SECTION 079200 - JOINT SEALANTS

### PART-1 GENERAL

#### 1.01 Summary:

- A. The Work of this Section includes, but is not limited to, sealing or caulking the following:
  - 1. New masonry-to-existing masonry joints on the interior and exterior, which are not building expansion joints.
  - 2. Perimeter joints, on both sides of frame, between hollow metal frames and the adjoining wall construction.
  - 3. Miscellaneous joints between dissimilar materials, as directed by the Architect.

#### 1.02 References:

- A. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
- B. ASTM C 1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

#### 1.03 Submittals:

- A. Product Data: Manufacturer's technical literature and specifications for each product to be furnished. Clearly indicate applications for which each kind of sealant is to be used.
- B. Samples for Initial Color Selection: Actual sealant bead samples of manufacturer's full standard color range for initial color selection by Architect.

#### 1.04 Quality Assurance:

- A. Installer Qualifications: Engage a single experienced installer to perform all of the joint sealant work specified in this Section. Installer shall be one 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.

#### 1.05 Delivery, Storage, and Handling:

- A. Deliver materials in manufacturer's original, unopened containers.
- B. Store between 40 and 90 degrees F (4-32 degrees C).

#### 1.06 Project Conditions:

- A. Do not apply clear water repellent sealers, waterproofing compounds, or other architectural coatings to surfaces to which sealers will be applied without first verifying compatibility.

- B. Install sealers when air and substrate temperatures are over 40 degrees F (4 degrees C) and rising, but less than 100 degrees F (37 degrees C), unless specific installation instructions are obtained from manufacturer.

## PART-2 PRODUCTS

### 2.01 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. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  - 1. Architectural Sealants: 250 g/L.
  - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 3. Sealant Primers for Porous Substrates: 775 g/L.

### 2.02 Sealant Materials:

- A. First-quality products of manufacturer, delivered in unopened containers, properly stored, mixed, and applied in strict accordance with the manufacturer's printed instructions.
- B. Siliconized Acrylic Latex Sealant: Tremflex 834, as manufactured by Tremco, or approved equal by Pecora, Polymeric Systems, Sonneborn Building Products, or Bostic Construction Products.
  - 1. Applications: Perimeter joints of interior hollow metal frames.
- C. Exterior Locations (Unless Otherwise Indicated): Polymer-based urethane liquid, one-part, non-sag sealant. Provide one of the following:
  - 1. Mameco International; Vulkem 921
  - 2. Pecora Corporation; Dynatrol I-XL
  - 3. Polymeric Systems, Inc.; Permapol RC-1
  - 4. Sonneborn Building Products; Sonolastic NP-1
  - 5. Tremco; Dymonic
  - 6. Bostic Construction Products; Chemcalk 100
- F. Colors shall selected by Architect from manufacturer's full range.
- G. Primers shall be clear, nonstaining types as recommended by the sealant manufacturer.

### 2.03 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.

- B. Cylindrical Sealant Backings (Backer Rod): ASTM C 1330, of either type indicated below, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
  - 1. Type C: Closed-cell material with a surface skin.
  - 2. Type B: Bicellular material with a surface skin.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

### PART-3 EXECUTION

#### 3.01 Preparation:

- A. Joints to be sealed shall have substrates that are clean, dry, and free of loose dust and dirt, and shall have been maintained at the recommended temperature for at least 12 hours.
  - 1. At existing joints indicated to receive new sealant, remove existing sealant and backing material.
- B. Insert compressible foam backer rod in joints which are no less than 3/8-inch deep and are deeper than the joint width.
- C. Install bond breaker tape, or other bond breaker material recommended by manufacturer suitable to the application, for the following joints indicated to receive sealant:
  - 1. In joints where the mortar or grout has been raked back.
  - 2. In tile expansion joints.
  - 3. In all other joints which do not or can not receive compressible foam backer rod and which are subject to movement due to thermal, moisture or structural factors.

#### 3.02 Application:

- A. Compactly fill and seal joints subject to moisture penetration or air infiltration with caulking material. Tool joints, if necessary, using a pointing iron dipped in solvent to provide a neat tight joint.
- B. Comply with sealant manufacturer's guidelines for acceptable joint configurations and range of sealant depth-to-width ratios that will produce optimum sealant performance. In no case shall the sealant be of less than 3/16 in. depth at the midsection of the joint sealant profile. Profile of exposed joints shall be concave. Do not build-up with compound.

END OF SECTION

SECTION 081113 - HOLLOW METAL DOORS AND FRAMESPART-1 GENERAL1.01 Summary:

- A. This Section includes hollow metal doors and hollow metal door frames. Such items are denoted as "hollow metal" ("HM") on the Door Schedule and Drawings.
- B. Related work specified in other Sections:
  - 1. Division 8 Section "Door Hardware" for door hardware.
  - 2. Division 9 Section "Painting" for field painting of hollow metal doors and frames.

1.02 Submittals:

- A. Product Data: For each type of product indicated, including, but not limited to, material descriptions, core descriptions, fire-resistance rating, and finishes.
- B. Shop Drawings: Show the door numbers shown on the Contract Documents. If the manufacturer desires to use another numbering system, the Shop Drawings shall also contain the Architect's number. Failure to include the Architect's number on the Shop Drawings will be sufficient grounds for rejection without further action. Include the following:
  - 1. Elevations of each door and frame design. Show location, size, and hand of each door. Show fire-resistance ratings and labels to be provided (if any)
  - 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
  - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
  - 4. Locations of reinforcement and preparations for hardware.
  - 5. Details of each different wall opening condition.
  - 6. Details of anchorages, joints, field splices, and connections.
  - 7. Details of accessories.
  - 8. Details of moldings, removable stops, and glazing (if any).

1.03 Quality Assurance:

- A. Source Limitations: Obtain standard steel doors and frames through one source from a single manufacturer.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by UL or Warnock Hersey, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
- C. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

1.04 Delivery, Storage and Protection:

- A. Doors and frames shall be properly protected, handled, and delivered undamaged to the site. Twisted, dented, or otherwise damaged units will be subject to rejection. Scratches or chips of the paint film shall be immediately touched-up with rust-inhibitive paint in the field. Doors shall be individually wrapped.

- B. Items shall be carefully and neatly stored at the site on platforms or dunnage, and fully covered and protected from damage by any cause. Provide separators and other provisions to assure adequate ventilation between units. Store doors in vertical position.

#### 1.05 Project Conditions:

- A. Field Measurements: Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating standard steel frames without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

#### 1.06 Coordination:

- A. Coordinate installation of anchorages for standard steel frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

### PART-2 PRODUCTS

#### 2.01 Manufacturers:

- A. Subject to compliance with requirements, provide hollow metal doors and frames by one of the following manufacturers:
  - 1. Amweld Building Products
  - 2. Ceco Door Products
  - 3. Curries Company
  - 4. Kewanee Corporation
  - 5. Overly Manufacturing Company
  - 6. Pioneer Industries
  - 7. Steelcraft; an Ingersoll-Rand Company.
  - 8. Windsor Republic Doors.

#### 2.02 Hollow Metal Frames:

- A. General:
  - 1. Comply with ANSI A250.8 and with details indicated for type and profile.
- B. Interior Frames: Fabricated from cold-rolled steel sheet conforming to ASTM A 1008, Commercial Steel (CS), Type B, suitable for exposed applications, or from hot-rolled steel sheet conforming to ASTM A 1011, Commercial Steel (CS), Type B, free of scale; pitting, or surface defects; pickled and oiled, unless otherwise indicated to comply with exterior frame requirements.
  - 1. Metal thickness for frame openings 4 ft. 0 in. or less in width shall not be less than 16 gauge; for frames over 4 ft. 0 in. in width, not less than 14 gauge. All parts, reinforcement, and other components shall be of steel.
- C. Frames shall be double-rabbit type, sharply formed to size with profile shown on Drawings, and of design to suit job conditions, being factory set up assemblies, having hairline joints, and full-

profile welded connections. Sidelight and transom frames shall be of similar construction, integral with door frames or separate units as detailed. Provide internal reinforcement necessary for rigid anchorage or stiffness where shown or required, and internal splice reinforcement at field splices.

- D. Frames shall be provided with temporary steel spreaders for shipment and handling.
- E. Provide loose stops, temporarily fixed for shipment, for all glazed, paneled, or louvered openings.
- F. Back bands shall be of widths required by Drawing details, but not less than 1/2 in. wide. No raw edges shall be exposed.
- G. New frames occurring in existing openings, or in locations where their size or construction could be influenced by existing work, shall be fabricated to those dimensions and existing conditions verified at the site.
- H. Certain frames, where called for on Drawings, shall be provided with loose stops, internal reinforcement, and other required provisions for anchor bolt fastening at jambs into existing work.
- I. Frames shall be shop mortised, internally reinforced, drilled and tapped for templated hardware, and provided with 26 gauge mortar guards at hardware cut-outs.
  - 1. Provide openings for rubber bumpers: Three per single door; two per double opening.
  - 2. Minimum Hardware Reinforcement Required:
 

Hinges:	8 gauge
Strike:	12 gauge
Closer:	12 gauge
Surface-Mounted Hardware:	12 gauge
- J. Provide not less than three anchors per jamb up to 70 in. opening height and one additional for each additional 30 in. of opening height; of type suitable to wall construction or UL requirements of at least 16 gauge thickness; and, adjustable floor knee anchors. Frames mounted in steel stud partitions, or walls other than masonry, shall have adjustable jamb anchorage strut extensions to structure above.

### 2.03 Hollow Metal Doors:

- A. General:
  - 1. Provide flush doors of size and design indicated, of 1-3/4 in. thickness, fabricated with smooth surfaces, without visible joints or seams on exposed faces, unless otherwise indicated. Comply with ANSI A250.8. Doors shall be neat in appearance, free of warp or buckle, and all bends sharp and true. All parts and reinforcements shall be of steel.
- B. Interior Doors: Fabricated from cold-rolled steel sheet not less than 18 gauge thickness and conforming to ASTM A 1008, Commercial Steel (CS), Type B, suitable for exposed applications; free of scale, pitting, or other defects; unless otherwise indicated to comply with exterior door requirements.

- C. Doors shall be internally reinforced by one of the following methods:
1. Minimum 22 gauge continuous, full height, full depth vertical stiffeners spaced not more than 6 in. apart and spot welded to each face sheet 4 in. on center, spaces between stiffeners filled full height with organic incombustible insulation.
  2. One-piece resin-impregnated honeycomb core with sanded edges and securely bonded to both face sheets.
  3. Interior of doors completely filled with a rigid urethane or styrene core, foamed in-place, and chemically bonded to all interior surfaces. Urethane foam is to be self-bonding, self-hardening, and self-extinguishing.
- D. Vertical door edges shall be mechanically interlocked or smooth with no visible welds as standard with manufacturer. Top and bottom edges shall be fully closed full width with continuous minimum 16 gauge channels welded to both face sheets.
- E. Doors shall be mortised, reinforced, drilled, and tapped at the factory for templated hardware.
1. Minimum hardware reinforcement required:
 

Hinge:	8 gauge
Locks, Bolts, Holders:	12 gauge
Closer:	12 gauge
Surface-Mounted Hardware:	12 gauge
  2. Reinforce doors as necessary to allow for attachment of hardware without through-bolting.

#### 2.04 Steel Finishes:

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish standard steel door and frames after assembly. All surfaces of frames, inner and outer, shall receive this treatment.
- B. Metallic-Coated Steel Surface Preparation: Clean galvanized 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.
- C. Steel Surface Preparation: Clean non-galvanized surfaces to comply with SSPC-SP 1, "Solvent Cleaning"; remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel; comply with SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." Phosphatize prior to prime paint application.
- D. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.7 mils.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied finish paint

system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

### PART-3 EXECUTION

#### 3.01 Erection:

- A. Frames shall be temporarily braced in plumb and square final position until permanently built into the building construction. Frames shall be rigidly secured in place with jamb anchors tied into wall construction, and floor knees and sill anchors secured with expansion bolts or power-driven fasteners.
- B. Frames in masonry and concrete walls shall be filled full with grout. Secure ceiling struts to construction above with fasteners to suit conditions.
- C. Doors shall be hung with specified hardware to swing free, close snug, and stay in any open position.
- D. Where frames are too large to shop-assemble as one unit, field weld sections together and grind welds smooth.

#### 3.02 Existing Openings:

- A. Limited allowance is permitted in the manufacture of those doors and frames to be fitted into existing openings. The manufacturer may adhere to accepted industry standard sizes, with jamb and/or head frame members accordingly sized to accommodate the opening size. Such existing opening dimensions and surrounding construction conditions shall be verified at the site before those doors and frames are fabricated.

#### 3.03 Clearances:

Measured from finished floor material:

- A. Non-Fire-Rated Doors:
  - 1. Jambs and Heads: 3/32 in.
  - 2. Meeting Edges, Pairs of Doors: 1/3 in.
  - 3. Bottoms: 1/8 in. at thresholds or carpet; and, 3/8 in. elsewhere.
- B. Fire-Rated Doors: Comply with NFPA 80
- C. Smoke Doors: Doors in smoke partitions shall comply with NFPA 105.

#### 3.04 Adjusting and Cleaning:

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including standard steel doors or frames that are warped, bowed, or otherwise unacceptable.
- B. Clean grout and other bonding material off standard steel doors and frames immediately after installation.

- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

END OF SECTION

SECTION 081416 – FLUSH WOOD DOORSPART-1 GENERAL1.01 Summary:

- A. This Section includes solid-core doors with wood veneer. All new wood doors shall be prefitted, premachined, and prefinished by the door manufacturer.
- B. Related work specified in other Sections:
  - 1. Division 8 Section "Hollow Metal Doors and Frames" for door frames.
  - 2. Division 8 Section "Door Hardware" for door hardware.

1.02 Submittals:

- A. Product Data: For each type of door, including fire-resistance ratings (if any), details of core and edge construction, trim for openings, and factory-finishing specifications. Provide data of proposed finish system, indicating basic composition of finish materials and performance characteristics of system.
- B. Shop Drawings: Show the door numbers shown on the Contract Documents. If the manufacturer desires to use another numbering system, the Shop Drawings shall also contain the Architect's number. Failure to include the Architect's number on the Shop Drawings will be sufficient grounds for rejection without further action. Include the following:
  - 1. Location, size, and hand of each door.
  - 2. Elevation of each door; construction details not covered in Product Data; location and extent of hardware blocking.
  - 3. Indicate dimensions and locations of mortises and holes for hardware.
  - 4. Indicate dimensions and locations of cutouts.
  - 5. Indicate requirements for veneer matching.
  - 6. Indicate doors to be factory finished and finish requirements.
  - 7. Indicate fire ratings for fire doors.
- C. Samples for Initial Selection: Color charts consisting of actual materials in small sections for the following items:
  - 1. Faces of factory-finished doors with proposed matching veneer species, grade and transparent finish. Show the standard range of colors available for stained finishes.

1.03 Quality Assurance:

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.
- B. Quality Standard: Comply with Architectural Woodwork Institute (AWI) "Architectural Woodwork Quality Standards" for grade of door, core, construction, finish, and other requirements, except where more stringent requirements are indicated.
- C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1.04 Delivery, Storage and Handling:

- A. Doors shall be individually packaged at the factory in kraft paper or other protective covering; such covering shall remain on doors after hung, until such time as on-site damage threat is past. Stack doors clear of the floor on at least three supports with three spacers between doors. Doors shall be delivered and stored only after building is closed-in and continuously heated and adequately ventilated.
- B. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.05 Sequencing and Coordination:

- A. Furnish door manufacturer with copies of accepted metal frame and hardware shop drawings and schedules, all necessary templates, and one sample of finish hardware (if requested). Such samples shall be returned for field installation.

1.06 Special Warranty:

- A. Wood doors shall be warranted for the life of the installation, in writing, by the manufacturer, to be free from any defects, which shall make them unsuitable for the use for which they were intended. A warp (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section, or telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span, shall be considered a defect under the terms of this warranty. Warranty shall provide for replacement, rehanging, and refinishing at no cost to the Owner.
- B. Manufacturer shall inspect doors after installation and shall note on warranty that no provisions of the warranty have been voided or nullified, and that warranty is in full effect at completion of installation.

## PART-2 PRODUCTS

2.01 Manufacturers:

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Marshfield Door Systems
  - 2. Algoma Hardwoods, Inc.
  - 3. Eggers Industries; Architectural Door Division.
  - 4. VT Industries, Inc.
  - 5. Oshkosh Architectural Door Co.
  - 6. Graham Manufacturing Corp.
  - 7. Mohawk Flush Doors, Inc.

2.02 Door Construction, General:

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain any added urea formaldehyde.

- B. Unless otherwise indicated, doors shall be five-ply flush construction with solid particleboard core and transparent finish. Adhesives used in door construction shall be Type I for face assembly and Type II for core assembly.
  - 1. Grade: Custom (Grade A faces).
  - 2. Face Veneer Species and Cut: **Match existing wood doors.**
  - 3. Blocking: Provide wood blocking in doors as needed to eliminate through-bolting hardware.
- C. Face veneers shall be standard thickness (minimum 0.02"), book-matched pieces with running-matched faces. Pairs of doors shall be veneer matched. Veneers shall be matched to minimize color variation between adjacent pieces of veneer.
- D. Crossbands shall be 1/16 in. thick hardwood tapeless spliced, no voids.
- E. Stiles and Rails:
  - 1. Top and Bottom Edge Rails: One-piece matching hardwood or laminated strand lumber (LSL or SCL), factory filled and protective coated.
  - 2. Outer Vertical Door Edges: 2-ply construction, consisting of face-matching hardwood veneer in one-piece length covering (hiding) the edges of the crossbands, adhered to a laminated strand lumber stile, with total combined thickness not less than 1-3/8 inches.
- F. Particleboard Core: Solid, single thickness slab of particleboard complying with ANSI A208.1, Grade LD-2.
- G. Construction: Five plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.

### 2.03 Fire-Rated Doors:

- A. Fire-rated doors shall bear UL or Warnock-Hersey label. Labeled doors with ratings longer than 20 minutes shall be mineral core doors similar to Marshfield Type DFM. Labeled doors for 20-minute rating shall be particleboard construction similar to Marshfield Type DFP 20. Label shall state if door is to be used in stair tower, fire rated wall, or fire separation wall.
- B. Mineral core doors shall have manufacturer's standard inner blocking for non-through-bolt mounting of scheduled surface hardware, such as exit devices, closers, and locksets. Refer to Hardware Schedule(s).

### 2.04 Fabrication and Finishing:

- A. Doors shall be prefitted to finish size, premachined for all hardware, except for surface-mounted hardware, and prefinished by the door manufacturer at the factory prior to delivery.
- B. Doors shall be of finished sizes to fit frame openings and of bevel to suit indicated swing. Routing, rabbeting, and boring for hardware shall be complete before finishing.
- C. Finishing: Provide factory-smooth-sanded and -finished doors using manufacturer's transparent finish system equivalent to AWI Premium Grade System TR-6, catalyzed polyurethane finish and shall meet Green Seal requirements. For open-grain woods, provide with filled finish.
  - 1. Staining: As selected by Architect from manufacturer's full range.

## PART-3 EXECUTION

### 3.01 Examination:

- A. Examine doors and installed door frames before hanging doors. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 Installation:

- A. Condition wood doors to the average humidity of the building before installation.
- B. Hardware: For installation, see Division 8 Section "Door Hardware."
- C. Install doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
- D. Install doors with proper hardware only in frames for which they were manufactured. Do not cut doors to sizes smaller than that of manufactured size. Driving or shimming to accomplish hardware fit will not be permitted. Align in frames for uniform clearance at each edge.
- E. Surface hardware shall be non-through-bolt mounted in accordance with door manufacturer's instructions.
- F. Doors shall swing and close freely without forcing, and shall stand in any open position without hinge binding.

### 3.03 Clearances:

- A. Non-Fire Rated Doors: (measured from finished floor)
  - 1. Jambs and Heads: 3/32 in.
  - 2. Meeting Edges, Pairs of Doors: 1/3 in.
  - 3. Bottoms: 1/8 in. at thresholds or carpet; and, 3/8 in. elsewhere.
- B. Fire-Rated Doors: Comply with NFPA 80.
- C. Smoke Doors: Doors in smoke partitions shall comply with NFPA 105.

### 3.04 Adjusting:

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION

SECTION 092116 - GYPSUM BOARD ASSEMBLIESPART-1 GENERAL1.01 Summary:

- A. This Section includes, but is not necessarily limited to, assemblies comprising the following primary materials:
  - 1. Interior gypsum wallboard (Gyp. Bd. or GWB).
  - 2. Non-load-bearing gage-metal framing, furring, and accessories for assemblies covered by this Section.
- B. "Assemblies," as used herein, may include partitions, bulkheads, soffits, ceilings, furred-out wall finishes, column enclosures, and other similar constructions. Refer to Drawings for specific types of assemblies required.
- C. Related work specified in other Sections:
  - 1. Division 5 Section "Cold-Formed Metal Framing" for exterior non-load-bearing framing.
  - 2. Division 6 Section "Gypsum Sheathing" for gypsum sheathing.

1.02 Definitions:

- A. Gypsum Board Terminology: Refer to ASTM C 11 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.03 Referenced Standards:

- A. Various standards of the following organizations are referenced in this Section:
  - 1. American Society for Testing Materials (ASTM).
  - 2. American National Standards Institute (ANSI).
  - 3. Gypsum Association (GA).

1.04 Submittals:

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

1.05 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 board manufacturer.

- D. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
  - 1. Fire-Resistance Ratings: Indicated by GA File Numbers in GA-600 "Fire Resistance Design Manual" or design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

#### 1.06 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, keep dry and protect against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum boards flat to prevent sagging.
- C. Handle gypsum boards to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

#### 1.07 Project Conditions:

- A. Environmental Limitations, General: Comply with ASTM C 840 or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Minimum Room Temperature: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg. F. For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg. F for 48 hours prior to application and continuously thereafter until drying is complete.
- C. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

## **PART 2 PRODUCTS**

### 2.01 Manufacturers:

- A. Subject to compliance with requirements, provide products by one of the following manufacturers, except where otherwise indicated:
  - 1. Steel Framing and Furring:
    - a. Clark Steel Framing Systems.
    - b. Dale Industries, Inc. - Dale/Incor.
    - c. Dietrich Industries, Inc.
    - d. MarinoWare; Division of Ware Ind.
    - e. National Gypsum Company.
    - f. Unimast, Inc.
  - 2. Gypsum Board and Related Products:
    - a. G-P Gypsum Corp.
    - b. National Gypsum Co.
    - c. United States Gypsum Co.

2.02 Metal Partition and Soffit Framing:

- A. Components, General: Comply with ASTM C 754 for conditions indicated. Steel sheet components shall comply with ASTM C 645 requirements for metal and have manufacturer's standard corrosion-resistant zinc coating.
- B. Steel Studs and Runners: ASTM C 645; minimum base metal thickness of 0.0312 inch (20 ga.); and depth as indicated. Studs shall have knurled flange faces and web punchouts.
- C. Deep-Leg Deflection Track: ASTM C 645 top runner with 2-inch-deep flanges.
- D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated. Minimum base metal thickness of 0.0312 inch (20 ga.) unless indicate otherwise.
- E. Cold-Rolled Channel Bridging: 0.0538-inch bare steel thickness, with minimum 1/2-inch- wide flange, 1-1/2-inch depth, and 1-1/2 by 1-1/2 inch, 0.068-inch-thick, galvanized steel clip angles for attachment to studs.
- F. Hat-Shaped, Rigid Furring Channels: ASTM C 645; minimum base metal thickness of 0.0312 inch (20 ga.); 7/8 inch depth unless otherwise indicated.
- G. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission; asymmetrical configuration with face attached to single flange by a slotted leg (web).
- H. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum bare metal thickness of 0.0188 inch (25 ga.), and depth required to fit insulation thickness indicated.
- I. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

2.03 Interior Gypsum Board Products

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Gypsum Wallboard: ASTM C 36.
  - 1. Regular Type:
    - a. Thickness: 5/8 inch, unless otherwise indicated; may be 1/2 inch thick at ceilings.
    - b. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
  - 2. Type X:
    - a. Thickness: 5/8 inch, unless otherwise indicated.
    - b. Long Edges: Tapered and featured (rounded or beveled) for prefilling.

2.04 Trim Accessories:

- A. Interior Trim: ASTM C 1047.
  - 1. Material: Galvanized steel sheet; except at shower areas, which shall be rolled zinc.

2. Shapes indicated below by reference to Fig. 1 designations in ASTM C 1047:
  - a. Cornerbead, with expanded flanges, for outside corners, unless otherwise indicated.
  - b. LC-bead, with both face and back flanges; expanded face flange formed to receive joint compound. Use LC-beads for edge trim, unless otherwise indicated.
  - c. L-bead, with face flange only; expanded face flange formed to receive joint compound. Use L-bead for edge trim where LC-bead cannot be used.
  - d. U-Bead: Use in janitor closets, storage rooms, and mechanical or electrical utility-type spaces where gypsum board abuts other construction.
  - e. One-piece expansion (control) joint formed with V-shaped slot and removable strip covering slot opening.

#### 2.05 Joint Treatment Materials:

- A. General: Comply with ASTM C 475.
- B. Joint Tape:
  1. Interior Gypsum Wallboard: Paper.
  2. Tile Backing Board and Cementitious Backer Units: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
  1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
  2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
  3. Fill Coat: For second coat, use setting-type, sandable topping compound.
  4. Finish Coat: For third coat, use setting-type, sandable topping compound.

#### 2.06 Auxiliary Materials:

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws for Fastening Panels: ASTM C 1002, unless otherwise indicated.
  1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
  2. For fastening panels to wood blocking, use self-drilling, self-tapping oval head screws of length required.
  3. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Isolation Strip at Exterior Walls: Asphalt-saturated organic felt, ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.

## PART-3 EXECUTION

### 3.01 Examination:

- A. Examine substrates to which gypsum board assemblies attach or abut, with Installer present, including welded hollow metal frames, cast-in-anchors, and structural framing 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.

### 3.02 Preparation:

- A. Control Joint Locations: **Review with Architect** prior to layout and erection if not already done so as part of the Gypsum Board Assembly Preinstallation Conference.

### 3.03 Installing Steel Framing, General:

- A. Comply with ASTM C 754; and ASTM C 840 requirements that apply to framing installation. Comply with panel manufacturer's installation recommendations where they are more stringent than the ASTM standards.
- B. Install supplementary framing, blocking, and bracing in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction, and to resist loads imposed by operation of doors. Comply with details indicated and with gypsum board manufacturer's written recommendations or, if none available, with United States Gypsum's "Gypsum Construction Handbook."
- C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement.
  - 1. Isolate partition framing and wall furring where it abuts structure, except at floor. Install slip-type joints at head of assemblies that avoid axial loading of assembly, and laterally support assembly. Use deep-leg deflection track where indicated.
  - 2. **Do NOT attach framing to roof deck in a manner that relies on the roof deck to support the vertical load of partition/ soffit/ bulkhead assemblies.** In such instances, provide supplemental support framing that relies on structural roof framing, columns, load-bearing walls, or adjoining partitions for proper support and transference of vertical loads.
- D. Do not bridge building control and expansion joints with steel framing or furring members. Frame both sides of joints independently. Refer to "Installing Trim Accessories" Article for location requirements.

### 3.04 Installing Steel Partition and Soffit Framing:

- A. Install tracks (runners) at floors, ceilings, and structural walls and columns where gypsum board assemblies abut other construction. Install studs plumb, square, and properly aligned to the lines and locations shown on the Drawings.
  - 1. Where studs are installed directly against exterior walls, install asphalt-felt isolation strip between studs and wall.
  - 2. Secure track to floor and overhead structural elements with proper fasteners placed at not more than 24 in. o.c.

- B. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at lower heights. 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 short of full height to provide perimeter relief.
  - 2. For fire-resistance-rated and STC-rated partitions that extend to the underside of floor/roof slabs and decks or other continuous solid-structure 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 and to make partitions continuous from floor to underside of solid structure.
- C. Install steel studs and furring at no greater spacing than 16 inches o/c.
- D. Install steel studs so flanges point in the same direction and leading edge or end of each panel can be attached to open (unsupported) edges of stud flanges first.
- E. Frame door openings to comply with GA-600 and with gypsum board manufacturer's applicable written recommendations, unless otherwise indicated. Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
  - 1. Install two studs at each jamb, unless otherwise indicated.
- F. Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

### 3.05 Applying and Finishing Panels, General:

- A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA-216.
- B. Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- C. Locate edge and 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. Do not make joints other than control joints at corners of framed openings.
- D. Attach gypsum panels to steel studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- E. Attach gypsum panels to framing provided at openings and cutouts. At hollow metal frames anchored to stud framing, spot grout at each jamb anchor clip and immediately insert gypsum panels into frames.
- F. Form control and expansion joints with space between edges of adjoining gypsum panels. Refer to "Installing Trim Accessories" Article for location requirements.

- G. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally or as specifically indicated. Fit gypsum panels around penetrating structural members, ducts, pipes, and conduits.
  - 1. Where gypsum board is indicated to not extend full height to underside of deck, panels shall extend not less than 4 in. above the adjoining finished ceiling elevation.
- H. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors. Provide 1/8- to 1/4-inch-wide spaces at these locations, and trim edges with U-, LC- or L-bead edge trim as indicated elsewhere where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- I. Seal construction at perimeters of partitions, behind control and expansion joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through-penetrations. Comply with ASTM C 919 and manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
- J. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.
  - 1. Space screws a maximum of 12 inches o/c for vertical applications.
- K. Space fasteners in panels that are tile substrates a maximum of 8 inches o/c.

### 3.06 Panel Application Methods:

- A. Single-Layer Application:
  - 1. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    - a. Stagger abutting end joints not less than one framing member in alternate courses of board.
    - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
  - 2. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
  - 3. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- B. Laminating to Substrate (if any): Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations for preparation and installation. Temporarily brace or fasten gypsum panels until fastening adhesive has set. The installation of gypsum board shall be an indication of acceptance of the wall surface and Installer shall assume the responsibility for any unacceptable finished work caused by wall conditions.

### 3.07 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 cornerbead at external corners.
- C. Install edge trim where edge of gypsum panels will be exposed.
  - 1. Install LC-bead where gypsum panels abut other construction and back flange can be attached to framing or supporting substrate, unless otherwise indicated.
  - 2. Install L-bead where edge trim can only be installed after gypsum panels are installed.
  - 3. Install U-bead where gypsum panels abut other construction in janitor closets, storage rooms, and mechanical or electrical utility-type spaces.
  - 4. Install control joints according to ASTM C 840 and manufacturer's recommendations. Locate control joints where indicated and/or as directed by Architect. In general, any straight run of gypsum drywall shall be subdivided by control joints not exceeding 30 feet on center.

### 3.08 Finishing Gypsum Board Assemblies:

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840, for locations indicated:
  - 1. Level 1: Embed tape at joints in 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: **At all other locations**, at panel surfaces exposed to view in janitor closets, storage rooms, and mechanical/ electrical/ utility spaces, embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners and trim flanges.

### 3.09 Closure of Head-of-Wall Joints:

- A. At gypsum board partitions that extend to the underside of floor/roof slabs/decks or other continuous solid-structure surfaces, permanently close joints and voids between top of partitions and floor or roof construction above with compressible gasket or other resilient material acceptable to Architect.
  - 1. Where new metal roof/ floor deck units lay across exposed non-fire-rated heads-of-partitions, closure of flutes is specified under Division 5 Section "Steel Deck." Fill remaining gap between bottom of deck and head-of-partition; hold fill material 1/2 inch back from exposed face of partition.
  - 2. Where partition is required to be fire-resistance rated, closure is specified under Division 7 Section "Firestopping."

3.10 Protection:

- A. 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

## SECTION 095100 – ACOUSTICAL PANEL CEILINGS

### PART-1 GENERAL

#### 1.01 Summary:

- A. This Section includes acoustical ceilings consisting of suspended exposed-grid systems with lay-in acoustical panels. Modifications to existing ceiling system, to the extent they are required, shall be performed under this Section as well.

#### 1.02 Submittals:

- A. Product Data: Manufacturer's complete technical descriptive literature for each item required, including specifications and installation recommendations.
- B. Shop Drawings: Show ceiling grid layout in measured space; show details and information pertinent to construction, installation, and placement of all components. Show adjacency detail between new ceiling system and existing ceiling (as occurs).

#### 1.03 Quality Assurance:

- A. Installer Qualifications: Engage an experienced installer who has completed acoustical tile ceilings and finishes similar in material, design, and extent to that indicated for this Project and with a minimum five-year record of successful in-service performance.
- B. Source Limitations for Ceiling Units: Obtain each type of acoustical panel from one source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.
- C. Source Limitations for Suspension System: Obtain each type of suspension system from one source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.

#### 1.04 Delivery, Storage and Handling:

- A. Deliver acoustical materials 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 detrimental conditions.
- B. Before installing acoustical materials, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical tiles and panels carefully to avoid chipping edges or damaging units in any way.

#### 1.05 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.

- B. The work area shall be reasonably clean and the structure in proper condition to receive acoustical materials. Acoustical work shall follow the installation of ductwork, piping and conduit located in ceiling space above ceilings.

#### 1.06 Coordination:

- A. Coordinate layout and installation of acoustical materials and suspension systems with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

#### 1.07 Extra Stock:

- 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:

- a. ACT Type 1: One extra unopened carton of full-size units.

### PART-2 PRODUCTS

#### 2.01 Acoustical Ceilings, General:

- A. Humidity Resistance: Unless indicated otherwise, ceiling panels shall be rated for 90% humidity conditions and shall have a 10-year sag- and warp-resistance warranty, comparable to Armstrong's "HumiGuard Plus" products.
- B. Acoustical Ceiling Colors: Manufacturer's standard white, unless indicated otherwise.
- C. Fire-Test-Response Characteristics: Provide ceilings (ceiling panels/tiles, grids and accessories) that comply with the following requirements:
  - 1. Fire-response tests were performed by UL, ITS/Warnock Hersey, or another independent testing and inspecting agency that is acceptable to authorities having jurisdiction and that performs testing and follow-up services.
  - 2. Surface-burning characteristics of acoustical panels shall comply with ASTM E 1264 for **Class A** materials as determined by testing identical products per ASTM E 84.
- D. Dimensions: Length by width dimensions for lay-in ceiling panels are nominal dimensions. Actual dimensions are to be factory-cut sizes that fit within suspended ceiling grids having standard modular dimensions matching the specified panel nominal length and width.

#### 2.02 Acoustical Ceiling Systems:

- A. ACT-1: 24 in. x 48 in. x 3/4 in. high density fiberglass lay-in panels with square edge profile; factory-applied, **washable**, stain-resistant, smooth painted finish; **rated for 100% humidity resistance and commercial kitchen environments**; minimum light reflectance (LR) rating of 0.80; and minimum noise reduction coefficient (NRC) of 0.85. Suspension system – Type C. Paint edges of panels to match face, whether factory or field cut. Provide the following panel product:
  - 1. CertainTeed; Ecophon Hygiene Performance A.

2.03 Suspension Systems:

- A. General: Unless indicated otherwise, suspension grids shall comply with ASTM C 635 "Intermediate Duty" Classification and material shall be galvanized steel.
- B. Suspension System Types:
  - 1. Type C: Exposed grid system with 15/16 in. wide face, similar to Chicago Metallic Corporation "260 Snap-Grid" system, with white aluminum cap, or equivalent by Armstrong World Industries, Certainteed Corp., or USG Interiors. Exposed flanges shall be of white baked enamel finish. System shall include white aluminum angle or channel perimeter molding.

PART-3 EXECUTION3.01 Ceiling Installation:

- A. Comply with ASTM C 636, per manufacturer's written instructions and Cisca's "Ceiling Systems Handbook." Do NOT attach to roof decking.
- B. Suspend main beams spaced at 24 in. or 48 in. o.c., as indicated on Drawings, from structure above by minimum #12 gauge galvanized wire hangers spaced not more than 48 in. o.c.
- C. Install interlocking cross-tees at 24 in. o.c. to form a 24 in. x 48 in., or 24 in. x 24 in. grid pattern.
- D. System shall be accurately leveled to within 1/8 in. in 12 ft. 0 in. Deflection shall not exceed 1/360 of the span of any component.
- E. Provide matching perimeter molding around separate room areas, abutting walls, and around columns and similar protrusions, unless indicated otherwise.
- F. Where perimeter molding meets expansion joint trim, provide a clear break in the molding equal to no less than the expansion joint width.
- G. Scribe and cut panels at borders and penetrations to provide a neat, precise fit. Coordinate with work of HVAC, plumbing and electrical trades.

3.02 Cleaning:

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 096517 - RESILIENT SHEET SAFETY FLOORING

## PART 1 - GENERAL

## 1.01 SUMMARY

- A. Section Includes: Slip resistant sheet vinyl safety flooring systems and accessories for the new walk-in refrigerator and freezer units.

## 1.02 REFERENCES

- A. **ASTM D 2047**, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
- B. **ASTM E 648/NFPA 253**, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
- C. **ASTM E662**, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
- D. **ASTM F710**, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- E. **ASTM F 970**, Standard Test Method for Static Load Limit.
- F. **ASTM F1482**, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.
- G. **ASTM F1303**, Standard Specification for Sheet Vinyl Floor Covering with Backing.
- H. **ASTM F2170**, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- I. **(RFCI)** Resilient Floor Covering Institute
  - 1. RFCI Standard Slab Moisture Test Method (Calcium Chloride Method)

## 1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports for sheet material, cap strip, and adhesive.
- B. Shop Drawings: Submit shop drawings to indicate materials, details, and accessories including but limited to the following:
  - 1. Submit a cut diagram indicating seam locations and roll direction.
- C. Samples for Selection: Manufacturer's standard range of color samples of sheet material and weld rod, for selection of color.
- D. Samples for Verification: Submit two 12" x 12" sample pieces of sheet material in selected color, 12" long cap strip.
- D. Operation and Maintenance Data: For installed products. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

## 1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has successful history of installing the specified flooring in walk-in coolers and freezers similar to that required for this project.
  - 1. Training: Installer who has attended an Altro flooring installation training clinic.
- B. Regulatory Requirements: Provide slip resistant sheet vinyl safety flooring in compliance with the following:
  - 1. Americans with Disabilities Act Architectural Guidelines (ADAAG).
  - 2. Occupational Safety & Health Administration (OSHA).
- C. Mock-ups: Install at project site a job corner mock-up, approximately 3' x 3', using approved products and installation methods.
  - 1. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
- D. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

## 1.05 SITE CONDITIONS

- A. Temperature Requirements: If storage temperature is below 65F (18C) or the floor temperature is below 50F (18C), the Altro safety flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation. For further information, refer to current Altro Installation Practices and Quick Facts.
- B. Maintain air temperature and structural base temperature at flooring installation area between 68F (20C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

## 1.06 WARRANTY

- A. Warranty period for Altro Stronghold 30 shall be 12 years commencing on date of substantial completion. Refer to conditions of the contract for project warranty provisions.

# PART 2 - PRODUCTS

## 2.01 SAFETY FLOORING

- A. Slip Resistant Sheet Vinyl Manufacturer: Stronghold 30 by Altro, Telephone 800.377.5597, Fax 610.746.4325; E-Mail Assistance: [info@altrofloors.com](mailto:info@altrofloors.com)
- B. Acceptable material: Altro Stronghold 30 (measurements and product weights given below are approximate): Slip Resistance .80/D .87/W. Thickness: 0.12" (3 mm); Roll Width: 6' 7" (2 m); Roll Length: 49' (15 m); Roll Weight: 286 lb (130 kg)
  - 1. Color: To be selected.

## 2.02 ACCESSORIES

- A. **Vinyl welding rod:** Acceptable material:
  - 1. Altro weld rod
- B. **Cove former:** Acceptable material, sized to suit application:
  - 1. Altro Cove former 20R - 24 mm (1") radius.
- C. **Cap strip:** Acceptable material, sized to suit application, Vinyl:
  - 1. Altro Cap Strip C7.
- D. **Adhesive:** Altrofix 30, solvent-free, two-part polyurethane. Use to fill joints between prefabricated floor panels.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. **Compliance:** Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions.
- B. **Site Verification of Conditions:** Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

### 3.02 PREPARATION

- A. Safety flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors. Clean metal surface of prefabricated floor panels.
- B. Always conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Internal Relative Humidity (IRH) test results must not exceed 85%.
- C. Do not proceed with work until results of moisture condition tests are acceptable.

### 3.03 INSTALLATION

- A. **Stronghold 30 Installation:** Install Altro safety flooring in accordance with the current posted Altro Installation Practices and Quick Facts Guide. All Seams shall be heat welded with Altro Weldrod™ only. Failure to install Altro safety flooring in accordance with recommended procedures will void the Altro Limited Product Warranty and cause the flooring to be rejected.
- B. **Coved Installation:** Where Altro safety flooring is coved up wall surfaces and other abutments to form an integral base, installation shall be in accordance with Altro safety flooring Installation Practices using the following accessories:
  - 1. At standard wall finishes: Use Altro C7 vinyl cap strip to accommodate sheet vinyl to a height as indicated; adhere with contact tape.

2. At 0.75" (19.1 mm) radius coving at juncture of vertical and horizontal surfaces:  
Use Altro Vinyl Cove Former 20R: install with contact tape.
3. Top set cove base: Install in accordance with manufacturer's instructions.

### 3.04 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas.
  1. Repair or replace damaged installed products.
  2. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.
- B. Protection:
  1. Sweep or vacuum all construction debris and dust first, then clean the flooring with Altro Clean 44 using an auto scrubber.

### 3.05 PROTECTION

- A. Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as a reusable textured plastic sheeting.
- B. Stronghold 30 should be covered and protected from all other trades during construction with a suitable non-staining protective covering without taping to the surface of the flooring.

END OF SECTION 09 6517

## SECTION 099000 - PAINTING

### PART-1 GENERAL

#### 1.01 Summary:

- A. This Section includes, but is not limited to, the surface preparation and field painting or finishing of the following exposed elements or surfaces, unless factory-finished or indicated as being field-finished otherwise:
  - 1. New and existing interior construction as called for in Room Finish Schedule to receive "Paint," "Glazed Paint" (Gl. Paint), or "Epoxy Paint" finish, or by similar notation.
  - 2. New unscheduled interior gypsum board, concrete masonry, and hollow metal frames.
  - 3. Other selective elements or surfaces indicated elsewhere to be painted.
- B. Examine the specifications for other trades and become thoroughly familiar with all provisions regarding the painting of work specified in those sections. Surfaces left unfinished by the requirements of other specification sections shall be painted or finished as a part of this Contract.
- C. Painter shall be responsible for inspecting the work of others prior to the application of paint or finishing materials. If a surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding, and puttying operations, the Painter shall notify immediately the General Contractor, in writing, or assume responsibility for, and rectify, resulting unsatisfactory finishes.

#### 1.02 Submittals:

- A. Product Data: For each paint system specified. Include block fillers and primers.
  - 1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
  - 2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis, VOC content, and instructions for handling, storing, and applying each coating material proposed for use.
  - 3. Submit manufacturer's documentation for each material verifying the percentages of post-consumer and pre-consumer recycled content by weight.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
- D. Samples for Verification: For each type of paint system and in each color and topcoat sheen.
  - 1. Submit Samples on rigid backing, no less than 8 inches square, with half white and half black background.
  - 2. Step coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.

#### 1.03 Quality Assurance:

- A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a five-year record of successful in-service performance.

- B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

#### 1.04 Delivery, Handling, and Storage:

- A. Deliver materials in original containers, with seals unbroken and labels intact.
- B. Store painting materials used on the job in their original containers with manufacturer's label, in a single place designated by Architect. Such storage place shall be kept neat and clean, and all damage thereto or to its surroundings shall be made good. Remove soiled or used rags, waste, etc. from the building every night and take every precaution to avoid danger of fire.

#### 1.05 Project Conditions:

- A. For interior painting, building shall be properly enclosed and ventilated, and the ambient temperature maintained at not less than 60 degrees F for the duration of the Work. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- B. Under no circumstances shall coatings be applied under environmental conditions outside the manufacturer's limits.

#### 1.06 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, including indication of where the paint type and color was applied. Deliver extra materials to the Owner.
- B. Quantity: Furnish the Owner with 2 gal. extra paint material for each color applied using in excess of 25 gallons.

### **PART-2 PRODUCTS**

#### 2.01 Materials:

- A. Painting materials shall be products of well-known and reputable manufacturer.
- B. Painting materials shall be used only as specified by the manufacturer's directions on the container label.
- C. Painting materials, such as linseed oil, shellac, turpentine, etc., shall be pure, of highest quality.
- D. Colors, including deep tones, shall be selected by the Architect. The number of colors to be used on the job shall be determined by the Architect. If required, panels for finish and color shall be prepared in advance, with the materials as specified, for the review of the Architect.
  - 1. For bid purposes, it may be assumed that colors will match existing-to-remain, adjacent like substrates in each space.
  - 2. New exterior bollards will be a bright safety color, to be selected.

- E. Paints shall be from paint manufacturer's listed "best line" or top grade and of the type recommended by the manufacturer for the purpose used and shall be products of the following manufacturers, or accepted substitute:

Sherwin Williams Company  
Pratt & Lambert, Inc.  
Duron

MAB Paints  
PPG Industries  
Glidden Professional (formerly ICI/Dulux)

F. VOC Content:

1. Interior field-applied paint products shall comply with the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24), whichever is less:
  - a. Flat Paints and Coatings: 100 g/L.
  - b. Nonflat Paints and Coatings: 150 g/L.
  - c. Primers, Sealers, and Undercoaters: 200 g/L.
  - d. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
2. Exterior field-applied finishes shall not exceed federal, state and local VOC (volatile organic compound) limits, including the 2005 OTC (Ozone Transport Commission) regulations.

2.02 Performance Criteria:

- A. Paint Sheens: Specular gloss readings when tested according to ASTM D 523 shall comply with the following:

1. Flat: Not more than 5 units at 60 degrees and 10 units at 85 degrees.
2. Eggshell: 5 to 20 units at 60 degrees.
3. Satin: 15 to 35 units at 60 degrees.
4. Low Luster: 25 to 35 units at 60 degrees.
5. Semi-Gloss: 35 to 70 units at 60 degrees.
6. Gloss: 70 or more units at 60 degrees.

B. Visual Quality:

1. Leveling: Apply finish with proper consistency and quantity, so that paint flows out to a level surface, free of brush and roller marks, bubbles, dust, runs, sags, and holidays. Spread coatings evenly.
2. Appearance: Provide uniform color, texture, and sheen.
3. Neatness: Do not smear, spatter, or run coatings over adjoining colors or materials. Cut-in lines shall be straight.

C. Paint Thickness: Provide the following minimum dry film thickness per coat:

1. Exterior Paints:
  - a. Primer on Metal: 2 mils
  - b. Primer on Concrete, Plaster, or Masonry: 1.5 mils
  - c. Finish Coats: 1.5 mils
  - d. Traffic Lines: 2.5 mils

2. Interior Paints:
    - a. Block Filler/Primer: 12 mils
    - b. Metal Primer: 2.0 mils
    - c. Other Primers: 1.5 mils
    - d. Finish Coats: 1.5 mils
  3. Thickness Test: Use visual observation gauge that measures V-shape scratch.
  4. For specific paint applications, where greater thicknesses are recommended by paint manufacturer or indicated in PART-3 of this Section, the greater of such thicknesses shall prevail over the above-stated minimums.
- D. Compatibility of Paint Types: Verify the compatibility of each type of finish coat with shop primers and between field coats. When necessary, switch paint types or use a block coat to avoid interference between paint types.

### PART-3 EXECUTION

#### 3.01 Workmanship:

- A. Workmanship shall be the best. Only skilled mechanics shall be employed. Results of each application shall be in keeping with standards of good practice and manufacturer's recommendations and subject to review of the Architect. Unless more stringent requirements are specified, surfaces to be painted shall be prepared, and paint shall be applied, in accordance paint manufacturer's recommendations for each different type of substrate.
- B. Exterior painting shall not be done while the surface is damp; during cold, rainy, or frosty weather; or, when the temperature is likely to drop to freezing. Avoid painting surfaces while they are exposed to hot sun.
- C. Surfaces to be painted shall be cleaned before painting. All knots, pitch streaks, and sappy spots shall be touched-up with shellac before priming. All necessary puttying of nail holes, cracks, etc. shall be done after the first coat, with putty of a color to match that of the finish. Putty shall be brought flush with the adjoining surface in a neat and workman-like manner. All metal surfaces shall be cleaned to remove any dirt, oil, or grease before applying finish materials.
- D. Remove rust or scale by wire-brushing or sanding clean before painting. Shop coats of paint that become marred shall be cleaned and touched-up with a good quality metal primer.
- E. Apply materials under adequate illumination, evenly spread, and smoothly flowed-on, without runs or sags. Coats shall be thoroughly dry before applying succeeding coats. Architect reserves the right to review the work, where a coat of material has been applied, before application of the succeeding coat(s), at no increase in cost. Woodwork to be finished with enamel or varnish shall be sanded smooth and the surface cleaned before proceeding with the application of the first coat.
- F. Suction spots or "hot spots" in plaster surfaces and openings adjoining trim shall be cut-out as required, then filled with a spackling compound or approved patching plaster, flush with adjoining plaster surface, and, when dry, shall be sanded smooth and sealed before application of priming coat.
- G. Enamel or varnish finish applied to wood or metal shall be sanded with fine sandpaper and then cleaned between coats to produce an even, smooth finish.

- H. Galvanized metal surfaces shall be chemically-treated with an approved compound to ensure paint bond.
- I. Existing exterior metal and cast iron trim shall have loose paint, dirt, and rust removed before painting.
- J. Closets and the interior of cabinets shall be finished the same as adjoining rooms, unless otherwise specified. All other surfaces shall be finished the same as nearest or adjoining surfaces, unless otherwise instructed by the Architect. Metal doors shall be finished on all faces and edges. Interior painted trim shall be back-primed before installation. Exterior trim shall be primed on all surfaces before installation.
- K. Protect all newly finished surfaces during progress of the Work. Protect all adjacent work and surfaces by drop cloths and masking, or other suitable covering, during progress of the Work.
- L. When spraying, mask surfaces not to be painted and remove loose items from the area. Upon completion of the Work, remove paint and varnish spots from the floors, glass, and other surfaces. Remove from the premises waste and accumulated materials caused by this trade and leave the work in clean and orderly condition.

### 3.02 Application:

- A. Secure color schedules from the Architect for rooms before applying any paint or finish. Prime and under coats shall be tinted to approximate the shade of final coat.
- B. Except as otherwise specified, the various surfaces shall be finished in accordance with the schedule included in this Section.
  - 1. Shop coats specified under other headings are in addition to coats specified hereinafter.
  - 2. Unless otherwise indicated, trade names of Sherwin-Williams products are used herein as indication of type and kind of material required in the Work.
  - 3. Refer to paint system schedules in Part 3 of this Section for specific products for each application. Additional manufacturers and products may be listed if the above-named manufacturers' recommended system includes such products. Unless indicated otherwise, all coats indicated in paint system schedules are full coats over each applicable substrate.
- C. If a substrate to be painted does not have a finish system specified in Part 3, confer with Architect to determine appropriate paint products to be used.

### 3.04 Interior Paint Systems:

#### Interior Concrete Masonry:

- 1st Coat: S-W PrepRite Block Filler, B25W25 (16 mils wet, 8 mils dry)
- 2nd Coat: S-W ProGreen 200 Low VOC Semi-Gloss, B31W651
- 3rd Coat: S-W ProGreen 200 Low VOC Semi-Gloss, B31W651  
(4 mils wet, 1.6 mils dry per coat)

#### Interior Metals:

- 1st Coat: S-W ProCryl Universal Primer, B66-310 Series (2-4 mils dry)
- 2nd Coat: S-W ProClassic Waterborne Acrylic High Gloss, B21-351 Series
- 3rd Coat: S-W ProClassic Waterborne Acrylic High Gloss, B21-351 Series  
(4 mils wet, 1.5 mils dry per coat)

## Interior Drywall:

- 1st Coat: S-W Harmony Low Odor Interior Latex Primer, B11W900  
(4 mils wet, 1.3 mils dry per coat)
- 2nd Coat: S-W ProGreen 200 Low VOC Eg-Shel, B20W651
- 3rd Coat: S-W ProGreen 200 Low VOC Eg-Shel, B20W651  
(4 mils wet, 1.6 mils dry per coat)

3.05 Refinishing Systems:

- A. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary for complete refinishing of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Clean and prepare surfaces to be refinished in accordance with the manufacturer's instructions for each particular substrate condition and as specified. Refinish with applicable system in preceding articles.

3.06 Touching-Up:

- A. Clean up and remove, every night, all dirt, rags, or waste materials generated by painting activities.
- B. At the completion of other branches of work, all painted and finished work shall be touched-up and restored where damaged or defaced, and the entire work left free from blemishes. Contractor shall go over the entire building and clean-off all paint or varnish spots from walls, floors, hardware, glass, etc.; leave all doors and sashes free to move; and, leave all paint and other finishes clean and acceptable condition.

END OF SECTION

SECTION 114000 - FOOD SERVICE EQUIPMENTPART-1 GENERAL1.01 Summary:

- A. This Section includes the furnishing and installation of all items of food service equipment, with accessories and appurtenant parts required to provide a complete and operating food service system as shown and called for in the Drawings and Specifications, or reasonably inferable there from. All parts or appurtenances required to make a system or item complete and satisfactorily operative shall be provided, even though such part or appurtenance may not be specifically mentioned or shown. Work of this Section shall include all motor starters for other than fractional horsepower motors, connection terminals, controls and control wiring, overload protection, safety devices, and other equipment required by N.E.C., faucets, waste traps, escutcheons, and other appurtenances necessary for proper operation of the equipment.
- B. Items of equipment hereafter listed and described by a certain manufacturer's name and model designation shall, unless otherwise indicated, be furnished complete with all components, accessories, finishes, and other operational and construction features as are listed or indicated in the named manufacturer's specifications or catalog data, current at time of bidding, as "standard" or otherwise furnished with that particular model mentioned herein. Each item shall, in addition, be furnished with such optional accessories or special features as are further herein specified.
- C. Related Work By Others:
  - 1. The Electrical Contractor will provide electrical power supply for equipment to the locations shown on equipment rough-in drawings and will make final connections to equipment terminal blocks or control box. All motor starters, combination starters, and disconnect switches, or other protective devices and other electrical items not an integral part of the equipment, shall be furnished and installed by the Food Service Equipment Installer. All control wiring, whether controls are equipment mounted or remote, shall be the responsibility of the Contractor furnishing the food service equipment.
  - 2. The Plumbing Contractor will provide hot and cold water supply, waste, and gas supply services to the locations shown on equipment rough-in drawings, and will make final connection of these services to faucet legs and trap tail-pieces provided by the Contractor furnishing the food service equipment. The Plumbing Contractor will furnish and install gas cocks. Exhaust hood and ventilation apparatus will be furnished under other contracts, unless specified otherwise herein.

1.02 Submittals:

- A. Coordination Drawings: Within 45 days after Award of Contract, submit to the Architect equipment rough-in coordination drawings. These drawings shall indicate, by dimension, the size and location of each service connection required (i.e., water, waste, gas, electric, etc.) to each piece of equipment. The Contractor shall be responsible for the size and location of these services installed in accordance with these drawings. These drawings shall be submitted to the Architect in at least eight copies; two copies, bearing Architect's acceptance, shall be furnished to each Contractor furnishing services to the equipment.

- B. Shop Drawings: Submit at least six copies of shop drawings to the Architect for review before any item of equipment is fabricated or purchased. Shop drawings or, in the case of purchased items, manufacturers' data sheets, shall describe, in detail, the size and type, construction details, gauge and finish of metals, service characteristics, capacities, fittings or accessories furnished, and other pertinent information for each item of equipment.

#### 1.03 Quality Assurance:

- A. All materials shall be new and of first quality. All work shall be performed in accordance with the best practices and highest standards of the industry.
- B. All items of equipment shall be approved by the National Sanitation Foundation and meet the requirements of the pertinent State of Delaware agencies. All work shall be performed in accordance with all applicable state and local codes. All electrical items shall be UL-approved and meet the requirements of the National Electrical Code.
- C. The mention of a manufacturer's name or model number relative to certain pieces of equipment is intended to indicate the type, kind, or quality required for that specific item and shall not be construed to limit the work to that particular manufacturer mentioned. However, the Contractor shall not presume to furnish equipment other than that specified without the Architect's review and acceptance of such proposed substitution in accordance with Instructions to Bidders, Article "Substitutions and Alternatives."
- D. All soldering for water lines shall be done with lead-free solder.
- E. R-12 refrigerant shall not be used in any equipment items.

#### 1.04 Warranty:

- A. The Contractor shall guarantee all items of equipment for a period of at least two years and shall repair or replace, to the Owner's satisfaction, any item showing failure or fault during this period, without cost to the Owner. Manufacturer's warranties, valid for one year or more, shall be assigned and delivered to the Owner.

### PART-2 PRODUCTS

#### 2.01 Schedule of Equipment:

- A. For location and identification purposes, item numbers preceding the item title, as specified herein, refer to the items used on the Kitchen Layout.
- B. Items specified herein in the singular reference shall be furnished in the quantities as shown on the Kitchen Layout or as hereinafter specified.
- C. Manufacturers: Equipment catalog model designation numbers of the manufacturers named herein are used to establish the model type, size, design, and quality features required for the various items of equipment included in this Section.

## SPECIFICATIONS

### Item 3.001 - WALK-IN-COOLER(+35) (1 REQ'D)

Bally Refrigerated Boxes Model CUSTOM

Outdoor Structure NSF APPROVED Bally Prefabricated Exterior Dimensions: Cooler 17'-10" Length x 14'-8" Width x 8'-10" Height Freezer 14'-00" Length x 14'-8" Width x 8'-10" Height 2 Compartments. With Floor Ceiling: Single Span Panel Thickness: 6" Exterior Vertical Used (7'-10") with 4" Partition, 6" Floor, 6" Ceiling Base Finish: Vertical and Ceiling Panels: Embossed Galvalume (26 GA) Base Finish Interior Floor: Galvanized (16 GA) Special Finishes: Interior Verticals - Stainless Steel 22 Ga. (Smooth) Interior Ceiling - Stainless Steel 22 Ga. (Smooth) Exposed Ext. Verticals - Stainless Steel 22 Ga. (Smooth) Facing Service Area Exposed Ext. Verticals - Kynar Finish(s) Advise Color Doors/Openings: 2 36" x 78" Hinged Door In a 46" x 94" Panel (4 Hinges per Door) Doors accessories: 2 4 1/2" Dial Type Thermometer w/ 5' Cap Tube 2 Mod 75LC Multi-Monitor 2 Door(s) Cut For Quarry Tile (Each) 2 Foot Treadle 2 Observation Window (14 x 24) Norfab w/ Aluminum frame 2 Super Door 36" Wide 36" High Diamond Plate Accessories and Extras: 1 Bally Standard Pressure Relief Port (< 400 sq/ft) 2 Kason 1806 LED Vapor Proof Light fixture over door 4 Kason 1810 LED 48" Light w/ (2) Lamps 12 L/F Stainless Steel (22 Ga.) Capping - Ceiling 220 S/F Outdoor Membrane Roof Refrigeration: 1 BEHA 010 E6 HT3BB (208-230/3/60) 1 HP A/C Herm Outdoor Med Unit (R404) 9490 BTU 1 BESA 015 L6 HT3BF (208-230/3/60) 1.5 HP A/C S/H Outdoor Low Unit (R404) 6910 BTU 1 BLP 209-MA-S1BPE 8600 BTU 115/1/60 Low Profile Evap 2 Fan(s) Air Defrost 1 BLP 209LE -S2BPE 9000 BTU 208/230/1/60 Low Profile Evap 2 Fan(s) Elect Defrost Deviations (Alternates, Remarks, Clarifications, Etc.): (X) Shelving, Racks, Interior Accessories (X) Labor on Warranties Alarm Systems (X) Supervision (X) Tubing, Wiring for Rfg. Equipment (X) Compressor Rack (X) Caulking and Sealants Refrigeration Systems (X) Refrigeration Accessories (X) Closure Panel and Trim (X) Sleeves, Penetrations, Escutcheon Plates (X) Floor Insulation and Vapor Barrier Cancelled Orders: Cancelled unshipped standard walk-ins will be charged a 30% restocking fee plus the cost of special panels. Cancelled refrigeration systems will be charged a 30% restocking fee and the cost of any freight accrued. Buy-out items will be charged a 25% restocking fee plus any freight accrued. Agency Ratings: Bally units comply or surpass applicable Flame Spread-25, UL, UL 723, & NSF standards in a manner conforming to ASTM E-84, and Factory Mutual standards. Quotation Limitations: This quotation was based upon the specifications given to Bally which may possibly be incomplete. Bally is not responsible for items missing from the quotation due to incomplete or excluded items in the specifications received from the customer. The customer is responsible for reviewing the quotation for omissions or deviations from the specifications given to Bally. All portions of the quotation are subject to revision upon receipt of detailed specifications or if changes are made following the delivery of the original quotation. Panel Construction: Bally Panels are manufactured with environmentally friendly HFC 245-FA polyurethane foam. This polyurethane foam offers the highest thermal insulation value and the most energy efficiency per cubic inch in comparison to similar foams. It has a zero Ozone Depletion Potential (ODP) and a low Global Warming Potential (GWP). It is not considered a Volatile Organic Compound (VOC) in the US. Standard 4" Bally panels meet the 2009 Federal Energy Standards. Refrigerants: Unless otherwise specified, refrigeration systems are quoted with environmentally friendly HFC R404A refrigerant. It has a zero Ozone Depletion Potential (ODP). The EPA lists it as an acceptable substitute for ozone-depleting substances. Automatic Door Closers: Bally includes automatic door closers and spring loaded hinges on all doors 42" wide and smaller as a standard feature with no additional charge that meet the 2009 Federal Energy Standards. Motors: Bally units are quoted with EC and PSC motors in compliance with federal energy standards, for increased energy savings. Lighting: Bally units are quoted with lighting in compliance with federal Energy Standards for increased energy savings. Optional Features: Bally offers additional optional energy-saving features such as Walk-In Alarm & Light Management systems that comply or surpass the 2009 Federal energy regulations. 5 Year Compressor Only Warranty (s) 5 Yr. System Parts With 1 Yr. Labor PLEASE BE ADVISED THAT THIS UNIT (S) AND RELATED SUB-SYSTEMS AND ACCESORIES IS BEING REVISED ON 1/30/2013. ADDENDA WILL BE ISSUED PROMPTLY AFTER BID SUBMISSION.

### Item 3.002 - EVAPORATOR COIL COOLER(+35) (1 REQ'D)

Bally Refrigerated Boxes Model CUSTOM

See item #1.001 for full specifications

**Item 3.003 - REMOTE CONDENSER UNIT (1 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

See item 1.001 for full specifications. See AFS Standard Detail 7.06, 7.06.1, 7.06.2, 7.06.3, 7.06.4-17, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.8, and 17.9. Curb by G.C.

**Item 3.004 - WALK-IN-FREEZER(-10) (1 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

**Item 3.005 - EVAPORATOR COIL FREEZER(-10) (1 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

See item #1.001 for full specifications

**Item 3.006 - REMOTE CONDENSER UNIT (1 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

See item 1.001 for full specifications. See AFS Standard Detail 7.06, 7.06.1, 7.06.2, 7.06.3, 7.06.4-17, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.8, and 17.9. Curb by G.C.

**Item 3.007 - OPEN NUMBER ( REQ'D)**

**Item 3.008 - OPEN NUMBER ( REQ'D)**

**Item 3.009 - OPEN NUMBER ( REQ'D)**

**Item 3.010 - STORAGE SHELVING UNITS (10 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

Cantilevered shelving by Bally-Per Plan

**Item 3.011 - STORAGE SHELVING UNITS (6 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

Cantilevered shelving by Bally-Per Plan

**Item 3.012 - STORAGE SHELVING UNITS (2 REQ'D)**

Bally Refrigerated Boxes Model CUSTOM

Cantilevered shelving by Bally-Per Plan

**Item 3.013 - ROLL-IN BLAST CHILLER/FREEZER (1 REQ'D)**

American Panel Corporation Model AP20BCF200-3

HurriChill™ Blast Chiller/Shock Freezer, Roll-in, self-contained, (20) 12" x 20" x 2.5" or (10) 18" x 26" pan capacity, 200 lbs. from 160° F to 38° F blast chill capacity/90 minutes, 120 lbs. 160° F to 0° F freeze capacity/240 minutes, solid-state electronic control panel with VFD display & alarms, (1) heated food probe, 208v/60/3, 19.5 amps, 2-1/2 HP, field wired, 30 amp circuit required, stainless steel interior & exterior, cUL (PAST MODELS: AP20BCF175-3)

- |      |   |
|------|---|
| 1 ea | 1 year parts & labor warranty standard on cabinet only            |
| 1 ea | Thaw capability with thaw probe and necessary hardware            |
| 1 ea | PC connection software  |
| 1 ea | Printer   |
| 1 ea | (4) Heated probes (total)   |
| 1 ea | (2) UV lights (total)   |
| 1 ea | (2) Day installation supervision, and Chef Commissioning/Training |

**PART-3 EXECUTION****3.01 Fabrication:**

- A. Dish tables, work tables, serving units, and similar items shall be fabricated and shop-assembled in largest complete units as practical to avoid field joints and field assembly. Fabrication shall be to verified field dimensions and conditions.
- B. Field joints, where required, shall be steel reinforced and gasketed so that tops can be tightly jointed to a hair-line connection.
- C. Welds shall be of full penetration and the entire length of the joint, without imperfections, burns, or buckles. Welds shall be ground and polished to match color and finish of adjacent metal. Welding shall be by electric fusion metal-arc method using rods of same composition and material as parts welded.
- D. Countertops and table tops shall have no exposed fasteners. All exposed surfaces, and other surfaces where possible, shall be free of bolt, screw, or rivet heads. Wherever bolts are used, they shall be of concealed type, and wherever they occur on the inside of the fixtures and are visible or subject to contact by hands or wiping cloths, they shall have suitable lock washers and chrome-plated brass or bronze acorn nuts.
- E. Drain boards shall slope toward sink; sink compartment bottoms shall pitch to drain outlet. Table tops and other work top surfaces, unless noted otherwise, shall have edges rolled-down 180

degrees on 1-1/2 in. diameter. External corners shall be bull-nosed. Edge formation shall be integral with tops.

F. All soldering for water lines shall be done with lead-free solder.

### 3.02 Materials:

- A. Unless otherwise indicated, fabricated items shall be constructed of the following materials:
1. Stainless steel shall be Type 302, 18-8 composition of U.S. Standard gauge specified.
  2. Exposed faces shall have #4 mill finish; concealed faces shall have minimum 100 grit finish. Galvanized steel shall be prime quality, hot-dip galvanized paint-bond grade, of gauge specified, primed and finished in gray lacquer.
  3. Hardware shall be heavy-duty chromed white metal or stainless steel.
  4. Faucets shall be heavy-duty chrome-plated cast or drawn brass or bronze, T & S #B-1123 or #B-1128.

### 3.03 Installation:

- A. Equipment shall be installed level and square in its final position as shown on drawings. Sink trim and traps shall be installed ready for final connections by Plumbing Contractor. All controls, control wiring, and terminal blocks shall be in place and prepared for power connection by the Electrical Contractor.

### 3.04 Testing and Cleaning:

- A. After all equipment is finally installed and connected, the Contractor shall test all lines and services, and shall determine that all such services are satisfactory and operational. All items of equipment shall then be put into operation and adjusted to the satisfaction of the Owner and Architect. All equipment shall finally be thoroughly cleaned and otherwise be prepared for use by the Owner.

### 3.05 Instructions:

- A. The Contractor shall provide selected members of the Owner's dietary and educational staff with a period of instruction wherein the proper and safe use and operation of the complete food service system is demonstrated and explained. The instruction period shall be of such duration that those personnel in attendance will be reasonably well trained in the operation of all equipment. The instruction may be by, or instructor may be, a factory representative or a member of the Contractor's staff; however, he shall, to the satisfaction of the Owner and the Architect, be knowledgeable and proficient in the operation of the equipment demonstrated.
- B. The Contractor shall provide the Owner with manufacturers' instruction and maintenance manuals for all items with moving parts or items for which replacement or repair parts can be anticipated.

### 3.06 Sanitary Sealing:

- A. All joints between equipment items abutting or adjoining item to item; all joints between walls and equipment items abutting thereto; and, all other wall, ceiling, and floor joints between dissimilar materials or other such joints otherwise open to entry of spillage, soil, or bacterial shall

be caulked tight, full, and continuously with General Electric Company's silicone clear sealant, in conformance with the regulations set forth by the State Departments of Health and Environmental Resources.

END OF SECTION