

**STATE OF DELAWARE**  
**OMB/DIVISION OF FACILITIES MANAGEMENT**  
**OMB/DFM PROJECT #MJ1002000042**

**SPECIFICATIONS**  
**FOR**  
**PIPING RISER REPLACEMENT**

**AT**  
**CARVEL STATE OFFICE BUILDING**  
**820 NORTH FRENCH STREET**  
**WILMINGTON, DELAWARE 19801**

**PREPARED BY**



**ISSUED FOR BID**  
**SEPTEMBER 2020**  
**DEDC PROJECT # 19P267**

NOT FOR BIDDING PURPOSES

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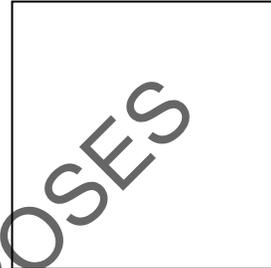
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**SECTION 00 01 07  
SEALS PAGE**

1.1 DESIGN PROFESSIONALS OF RECORD

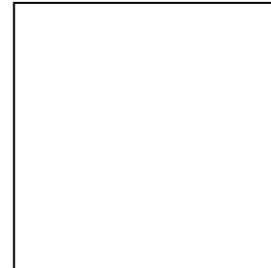
A. Plumbing, HVAC, Electrical Engineer:

- 1. DEDC, LLC
- 2. John Farina, P.E.; License No. 13559
- 3. Responsible for Divisions 01-49 Sections except where indicated as prepared by other design professionals of record.



B. Architect:

- 1. Becker Morgan Group, Inc. (BMG)
- 2. Brad A. Hastings, AIA LEED AP; License No. S5-0005276
- 3. Responsible for Divisions Sections indicated in Table of Contents.



**END OF SECTION**

NOT FOR BIDDING PURPOSES

NOT FOR BIDDING PURPOSES

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END OF SECTION

NOT FOR BIDDING PURPOSES

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PH104	PHASING PLAN – FLOORS 3-10
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AD104	ELEVENTH FLOOR DEMOLITION PLAN
AD105	TWELFTH FLOOR DEMOLITION PLAN
A101	FIRST FLOOR NEW WORK PLAN
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A103	FLOORS 3-10 NEW WORK PLAN
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P001	PLUMBING – PIPING RISER DIAGRAM – DOMESTIC WATER – DEMO
P002	PLUMBING – PIPING RISER DIAGRAM – DOMESTIC WATER – NEW WORK
P003	PLUMBING – PIPING RISER DIAGRAM – SANITARY PIPING - DEMO
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- P005 PLUMBING – PIPING RISER DIAGRAM – SANITRAY PIPING – CORE RESTROOMS – FLOORS 3-10
- P101 PLUMBING – FIRST FLOOR OVERALL PLAN – DEMO
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- P111 PLUMBING - 11½ FLOOR PLAN – DEMO – ALTERNATE #1
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- P201 PLUMBING – FLOORS 3-10 – ENLARGED PLANS (1 OF 2)
- P202 PLUMBING – FLOORS 3-10 – ENLARGED PLANS (2 OF 2)
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- P300 PLUMBING – DETAILS & SCHEDULE

**END OF SECTION**

**SECTION 00 11 16  
INVITATION TO BID**

Sealed bids for **OMB/DFM Contract No. MJ1002000042 – Carvel State Office Building – Piping Riser Replacement** will be received by the State of Delaware, Office of Management and Budget, Division of Facilities Management, by either electronic mail or by mail as follows. Bid submissions submitted by electronic mail must be sent to [DFM-BID@delaware.gov](mailto:DFM-BID@delaware.gov) and a hard copy of the entire submission shall be sent by mail within five (5) business days of the bid submission deadline.

Sealed bids shall be mailed and addressed to the Division of Facilities Management, Thomas Collins Building, 540 S. DuPont Highway, Suite 1 (Third Floor), Dover, DE 19901. The outer envelope should clearly indicate: **“OMB/DFM Contract No. MJ1002000042 - CARVEL STATE OFFICE BUILDING – PIPING RISER REPLACEMENT - SEALED BID - DO NOT OPEN.”**

Bids will be accepted until 1:30 p.m. local time on Wednesday, November 4, 2020. Bids will be opened and read aloud at 2:15 p.m. local time on Wednesday, November 4, 2020. Bidder bears the risk of late delivery. Any bids received after the stated time whether by mail or electronic mail will be rejected and the mailed bids will be returned unopened. The bid opening will be held through electronic means to comply with the Governor's State of Emergency. To attend the bid opening, the public may participate by joining the meeting at Webex.com, meeting number: 173 324 7812 and password: carvelpiping. There will be no in-person meeting.

The project involves the replacement of the vertical piping risers to include sanitary, vent, domestic water, fire protection, and storm drainage at the Carvel State Office Building.

A **MANDATORY** Pre-Bid Meeting will be held on Tuesday, October 20, 2020, at 1:30 p.m. In compliance with the Governor's State of Emergency, the pre-bid meeting will be held by electronic means. There will be no in-person meeting. The public may join the pre-bid meeting at Webex.com, meeting number 173 190 0798 Password: Carvel for the purpose of establishing the list of subcontractors and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Contract documents may be obtained at the office of DEDC, LLC, 315 S. Chapel Street, Newark, DE 19711, phone (302) 738-7172, upon receipt of \$150.00 per hard copy set or \$25.00 per electronic set, both non-refundable. Checks are to be made payable to “DEDC, LLC”.

Construction documents will be available for review at the following locations: DEDC, LLC; Delaware Contractors Association; Associated Builders and Contractors.

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business

Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. The Owner reserves the right to reject any or all bids and to waive any informalities therein.

**END OF SECTION**

NOT FOR BIDDING PURPOSES

**SECTION 00 21 13  
INSTRUCTIONS TO BIDDERS**

**TABLE OF ARTICLES**

1. DEFINITIONS
2. BIDDER'S REPRESENTATION
3. BIDDING DOCUMENTS
4. BIDDING PROCEDURES
5. CONSIDERATION OF BIDS
6. POST-BID INFORMATION
7. PERFORMANCE BOND AND PAYMENT BOND
8. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

**ARTICLE 1: GENERAL**

- 1.1 DEFINITIONS
- 1.1.1 Whenever the following terms are used, their intent and meaning shall be interpreted as follows:
- 1.2 STATE: The State of Delaware.
- 1.3 AGENCY: Contracting State Agency as noted on cover sheet.
- 1.4 DESIGNATED OFFICIAL: The agent authorized to act for the Agency.
- 1.5 BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special

Provisions (if any), the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

- 1.6 CONTRACT DOCUMENTS: The Contract Documents consist of the, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the form of agreement between the Owner and the Contractor, Drawings (if any), Specifications (Project Manual), and all addenda.
- 1.7 AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the instructions contained therein and the General Requirements herein, these General Requirements shall prevail.
- 1.8 GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.
- 1.9 SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.
- 1.10 ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.
- 1.11 BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.
- 1.12 SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.
- 1.13 BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- 1.14 BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).
- 1.15 ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.
- 1.16 UNIT PRICE: An amount stated in the Bid, where applicable, as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

- 1.17 SURETY: The corporate body which is bound with and for the Contract, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.
- 1.18 BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.
- 1.19 CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.
- 1.20 CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.
- 1.21 SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.
- 1.22 CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

**ARTICLE 2: BIDDER'S REPRESENTATIONS**

**2.1 PRE-BID MEETING**

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

2.2 By submitting a Bid, the Bidder represents that:

2.2.1 The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.

2.2.2 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.

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

**2.3 JOINT VENTURE REQUIREMENTS**

2.3.1 For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.

2.3.2 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.

2.3.3 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.

2.3.4 All required insurance certificates shall name both Joint Venturers.

- 2.3.5 Both Joint Venturers shall sign the Bid Form and shall submit a copy of a valid Delaware Business License with their Bid.
- 2.3.6 Both Joint Venturers shall include their Federal E.I. Number with the Bid.
- 2.3.7 In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.
- 2.3.8 Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

#### 2.4 ASSIGNMENT OF ANTITRUST CLAIMS

- 2.4.1 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 3: BIDDING DOCUMENTS

#### 3.1 COPIES OF BID DOCUMENTS

- 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the Architectural/Engineering firm designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.
- 3.1.2 Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architect assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 Any errors, inconsistencies or omissions discovered shall be reported to the Architect immediately.
- 3.1.4 The Agency 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.

#### 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

- 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architect.
- 3.2.2 Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect at least seven days prior to the date for receipt of Bids. Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.
- 3.2.3 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.

- 3.2.4 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.
- 3.2.5 The Owner will bear the costs for all impact and user fees associated with the project.

### 3.3 SUBSTITUTIONS

- 3.3.1 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.
- 3.3.2 Requests for substitutions shall be made in writing to the Architect at least ten 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 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.
- 3.3.3 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.
- 3.3.4 The Architect shall have no obligation to consider any substitutions after the Contract award.
- ### 3.4 ADDENDA
- 3.4.1 Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of the Bidding Documents.
- 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3.4.3 No Addenda will be issued later than 2 calendar 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.
- 3.4.4 Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued, and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addenda could be grounds for determining a bid to be non-responsive.

## ARTICLE 4: BIDDING PROCEDURES

### 4.1 PREPARATION OF BIDS

- 4.1.1 Submit the bids on the Bid Forms included with the Bidding Documents.
- 4.1.2 Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.
- 4.1.3 Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).
- 4.1.4 Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.
- 4.1.5 Interlineations, alterations or erasures must be initialed by the signer of the Bid.
- 4.1.6 BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No Change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the Contract.
- 4.1.7 Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.
- 4.1.8 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.
- 4.1.9 Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.
- 4.1.10 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.
- 4.1.11 Each bidder shall include a signed Affidavit for the Bidder certifying compliance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.
- 4.2 BID SECURITY
- 4.2.1 All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The 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 the standard OMB form (attached).
- 4.2.2 The Agency 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.

4.2.3 In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

#### 4.3 SUBCONTRACTOR LIST

4.3.1 In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the Bidder will be using to perform the work and provide material for that subcontractor category. Should the Bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the Bidder shall list that third-tier contractor's full name and address (City & State). **If the Bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the Bidder intends to perform the work themselves, the Bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category, print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (\*) next to any additional third-tier contractors, and submit it with your bid.

4.3.2 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.

#### 4.4 AFFIDAVIT OF CONTRACTOR QUALIFICATIONS

4.4.1 In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, each Bidder shall submit with their Bid the Affidavit of Contractor Qualifications certifying that the Bidder will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term. After a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

#### 4.5 AFFIDAVIT OF CRAFT TRAINING COMPLIANCE

4.5.1 In accordance with Title 29, Chapter 69, Section 6962(d)(13) of the Delaware Code, contractors and subcontractors must provide craft training for journeyman and apprentice levels if **all** of the following apply:

- A. A project meets the prevailing wage requirement under Title 29, Chapter 69, Section 6960 of the Delaware Code.
- B. The contractor employs 10 or more total employees.

C. The project is not a federal highway project

Failure to provide required craft training on the project may subject the successful contractor and/or subcontractor(s) to penalties as outlined in Title 29, Chapter 69, Section 6962(d)(13) of the Delaware Code.

Bidders shall submit the Affidavit of Craft Training Compliance prior to contract execution.

4.6 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

4.6.1 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, sex, color, sexual orientation, gender identity 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, sex, color, sexual orientation, gender identity 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, sex, color, sexual orientation, gender identity or national origin."

4.7 PREVAILING WAGE REQUIREMENT

4.7.1 Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, 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.

4.7.2 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.

4.7.3 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.

4.7.4 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.

4.8 SUBMISSION OF BIDS

- 4.8.1 Enclose the Bid, the Bid Security, and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.
- 4.8.2 Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.
- 4.8.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.
- 4.8.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.
- 4.8.5 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.
- 4.9 MODIFICATION OR WITHDRAW OF BIDS
- 4.9.1 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.
- 4.9.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.
- 4.9.3 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 5: CONSIDERATION OF BIDS**

**5.1 OPENING/REJECTION OF BIDS**

- 5.1.1 Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.
- 5.1.2 The Agency 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.
- 5.1.3 If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

**5.2 COMPARISON OF BIDS**

- 5.2.1 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 Agency shall have the right to accept Alternates in any order or combination.

- 5.2.2 The Agency 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 Agency or its agent(s), it is in the best interest of the State.
- 5.2.3 An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.
- 5.2.4 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.
- 5.2.5 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).
- 5.3 DISQUALIFICATION OF BIDDERS
- 5.3.1 An agency shall 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.
- 5.3.2 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.
- 5.3.3 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.
- 5.3.3.1 More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.
  - 5.3.3.2 Evidence of collusion among Bidders.
  - 5.3.3.3 Unsatisfactory performance record as evidenced by past experience.
  - 5.3.3.4 If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.

- 5.3.3.5 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.
- 5.3.3.6 If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.
- 5.3.3.7 If any exceptions or qualifications of the Bid are noted on the Bid Form.
- 5.4 ACCEPTANCE OF BID AND AWARD OF CONTRACT
- 5.4.1 A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.
- 5.4.2 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."
- 5.4.3 Each Bid on any Public Works Contract must be deemed responsive by the Agency 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 and specifications.
- 5.4.4 The Agency 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.
- 5.4.5 The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. The successful Bidder shall provide, at least two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. Bonds shall be for the benefit of the Agency 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 affect for period of one year after the date of substantial completion.
- 5.4.6 If the successful Bidder fails to execute the required Contract, Bond and all required information, 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 Agency 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.
- 5.4.7 Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification license numbers of such 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. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works

contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

- 5.4.8 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 6: POST-BID INFORMATION**

##### **6.1 CONTRACTOR'S QUALIFICATION STATEMENT**

- 6.1.1 Bidders to whom an award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

##### **6.2 BUSINESS DESIGNATION FORM**

- 6.2.1 Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

- 6.3 Bidders to whom an award of a Contract has been made must produce their Delaware Business License before the Contract can be executed.

#### **ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND**

##### **7.1 BOND REQUIREMENTS**

- 7.1.1 The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.

- 7.1.2 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.

- 7.1.3 The Performance and Payment Bond forms used shall be the standard OMB forms (attached).

##### **7.2 TIME OF DELIVERY AND FORM OF BONDS**

- 7.2.1 The bonds shall be dated on or after the date of the Contract.

- 7.2.2 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 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR**

- 8.1 Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

**END OF SECTION**



**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 thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), 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 within \_\_\_\_\_ calendar days of the Notice to Proceed.

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

By: \_\_\_\_\_  
( Authorized Signature )  
\_\_\_\_\_  
( Title )

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

**ATTACHMENTS**

- Sub-Contractor List
- Non-Collusion Statement
- Affidavit(s) of Employee Drug Testing Program
- Bid Security
- (Others as Required by Project Manuals)

**BID FORM**

**SUBCONTRACTOR LIST**

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b of the Delaware Code, the following subcontractor listing must accompany any bid submittal. The bidder must list **in each category** the full name and address (City & State) of the sub-contractor that the bidder will be using to perform the work and provide material for that subcontractor category. Should the bidder's listed subcontractor intend to provide any of their subcontractor category of work through a third-tier contractor, the bidder shall list that third-tier contractor's full name and address (City & State). **If the bidder intends to perform any category of work itself, it must list its full name and address.** For clarification, if the bidder intends to perform the work themselves, the bidder **may not** insert "not applicable", "N/A", "self" or anything other than its own full name and address (City & State). To do so shall cause the bid to be rejected. In addition, the failure to produce a completed subcontractor list with the bid submittal shall cause the bid to be rejected. If you have more than three (3) third-tier contractors to report in any subcontractor category, print out additional page(s) containing the appropriate category, complete the rest of your list of third-tier contractors for that category, notate the addition in parentheses as (CONTINUATION) next to the subcontractor category and an asterisk (\*) next to any additional third-tier contractors, and submit it with your bid.

<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.	_____	_____	_____
A.	_____	_____	_____
B.	_____	_____	_____
C.	_____	_____	_____
2.	_____	_____	_____
A.	_____	_____	_____
B.	_____	_____	_____
C.	_____	_____	_____

NOT FOR BIDDING PURPOSES

**BID FORM (Continued)**

3.	_____	_____	_____
A.	_____	_____	_____
B.	_____	_____	_____
C.	_____	_____	_____
4.	_____	_____	_____
A.	_____	_____	_____
B.	_____	_____	_____
C.	_____	_____	_____

NOT FOR BIDDING PURPOSES

**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 the Office of Management and Budget, Division of Facilities Management.

All the terms and conditions of OMB/DFM # MJ1002000042 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.**

**AFFIDAVIT  
OF  
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

**Contractor/Subcontractor Name:** \_\_\_\_\_

**Contractor/Subcontractor Address:** \_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

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.**

**END OF SECTION**

**AFFIDAVIT  
OF  
CONTRACTOR QUALIFICATIONS**

We hereby certify that we will abide by the contractor's qualifications outlined in the construction bid specifications for the duration of the contract term.

In accordance with Title 29, Chapter 69, Section 6962(d)(10)b.3 of the Delaware Code, after a contract has been awarded the successful bidder shall not substitute another subcontractor whose name was submitted on the Subcontractor Form except for the reasons in the statute and not without written consent from the awarding agency. Failure to utilize the subcontractors on the list will subject the successful bidder to penalties as outlined in the General Requirements Section 5.2 of the contract.

**Contractor Name:** \_\_\_\_\_

**Contractor Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

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.**

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NOT FOR BIDDING PURPOSES

**SECTION 00 43 13  
BID BOND**

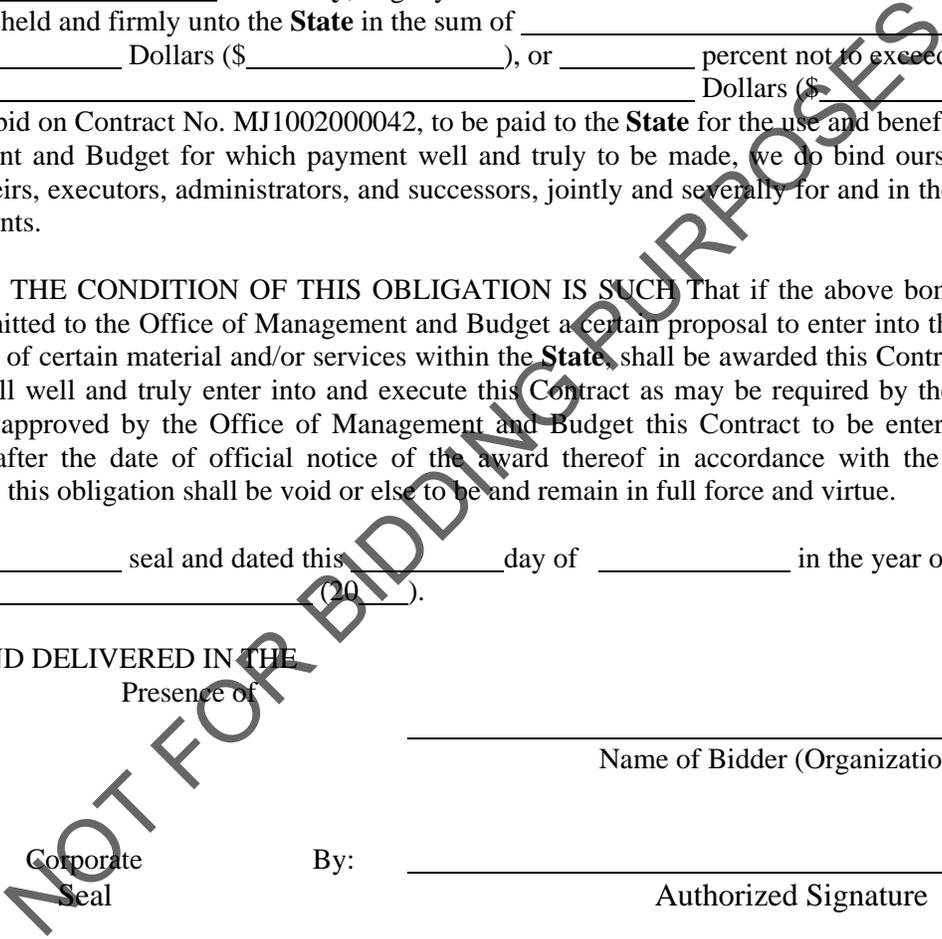
TO ACCOMPANY PROPOSAL  
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_  
\_\_\_\_\_ and State of \_\_\_\_\_ as **Principal**, and \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_  
and State of \_\_\_\_\_ as **Surety**, legally authorized to do business in the State of Delaware  
("State"), are held and firmly unto the **State** in the sum of \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_), or \_\_\_\_\_ percent not to exceed \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)  
of amount of bid on Contract No. MJ1002000042, to be paid to the **State** for the use and benefit of the Office  
of Management and Budget 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 bonded **Principal**  
who has submitted to the Office of Management and Budget a certain proposal to enter into this contract for  
the furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and if said  
**Principal** shall well and truly enter into and execute this Contract as may be required by the terms of this  
Contract and approved by the Office of Management and Budget this Contract 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 shall 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 (Organization)

Corporate  
Seal

By:

\_\_\_\_\_  
Authorized Signature

Attest \_\_\_\_\_

\_\_\_\_\_  
Title

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

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

By:

\_\_\_\_\_

\_\_\_\_\_  
Title

**END OF SECTION**

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**NOT FOR BIDDING PURPOSES**

**SECTION 00 52 13**  
**STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2017**

The contract to be utilized on this project shall be the "Standard Form of Agreement Between Owner and Contractor" AIA Document A101-2017, including AIA Document A101 – 2017 Exhibit A, as well as Supplements to A101-2017 and Exhibit A and the State of Delaware's General Requirements.

**END OF SECTION**

NOT FOR BIDDING PURPOSES

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NOT FOR BIDDING PURPOSES

# DRAFT AIA® Document A101™ - 2017

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

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

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

« »  
« »  
« »  
« »

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

« »  
« »  
« »  
« »

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

«testing»  
«»  
«»

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

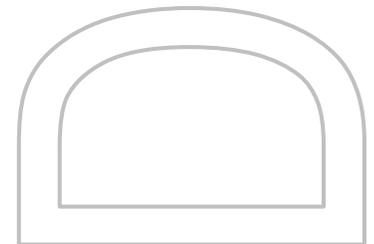
« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

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

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

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



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TABLE OF ARTICLES

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

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

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

*(Check one of the following boxes.)*

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:  
*(Insert a date or a means to determine the date of commencement of the Work.)*

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

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

§ 3.3 Substantial Completion

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

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

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

[ « » ] By the following date: « »

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

Portion of Work	Substantial Completion Date

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

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be «Zero Dollars and Zero Cents» (\$ «0.00»), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

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

Item	Price

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

Item	Price	Conditions for Acceptance

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

Item	Price

#### § 4.4 Unit prices, if any:

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

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

#### § 4.5 Liquidated damages, if any:

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

« »

#### § 4.6 Other:

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

« »

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

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

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

« »

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

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

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

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

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

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

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

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

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

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

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

« »

§ 5.1.7.1.1 The following items are not subject to retainage:  
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

<< >>

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:  
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

<< >>

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

<< >>

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

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

## § 5.2 Final Payment

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

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

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

<< >>

## § 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.  
(Insert rate of interest agreed upon, if any.)

<< >> % << >>

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

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

<< >>

<< >>

<< >>

<< >>

§ 6.2 Binding Dispute Resolution

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

(Check the appropriate box.)

Arbitration pursuant to Section 15.4 of AIA Document A201–2017

Litigation in a court of competent jurisdiction

Other (Specify)

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

ARTICLE 7 TERMINATION OR SUSPENSION

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

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

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

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.2 The Owner’s representative:

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

§ 8.3 The Contractor’s representative:

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

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

§ 8.5 Insurance and Bonds

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

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

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

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

<< >>

§ 8.7 Other provisions:

<< >>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

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

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

<< >>

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

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

.8 Other Exhibits:

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

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

<< >>

[ « » ] The Sustainability Plan:

Title	Date	Pages

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

Document	Title	Date	Pages

.9 Other documents, if any, listed below:

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

« »

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

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

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

« »« »

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

« »« »

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

NOT FOR BIDDING PURPOSES

# DRAFT AIA® Document A101™ – 2017

## Exhibit A

### Insurance and Bonds

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

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

«testing»  
«»

THE OWNER:  
(Name, legal status and address)

« »« »  
« »

THE CONTRACTOR:  
(Name, legal status and address)

« »« »  
« »

#### TABLE OF ARTICLES

- A.1 GENERAL
- A.2 OWNER'S INSURANCE
- A.3 CONTRACTOR'S INSURANCE AND BONDS
- A.4 SPECIAL TERMS AND CONDITIONS

#### ARTICLE A.1 GENERAL

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

#### ARTICLE A.2 OWNER'S INSURANCE

##### § A.2.1 General

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

##### § A.2.2 Liability Insurance

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

##### § A.2.3 Required Property Insurance

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User Notes: (1933659252)

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

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

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



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

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

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

Causes of Loss	Sub-Limit

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

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

Coverage	Sub-Limit

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

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

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

### § A.2.3.3 Insurance for Existing Structures

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

### § A.2.4 Optional Extended Property Insurance.

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

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

§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

§ A.2.4.2 Ordinance or Law Insurance, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

§ A.2.4.3 Expediting Cost Insurance, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

§ A.2.4.4 Extra Expense Insurance, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

§ A.2.4.5 Civil Authority Insurance, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

§ A.2.4.6 Ingress/Egress Insurance, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

§ A.2.4.7 Soft Costs Insurance, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

#### § A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

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

[ « » ] § A.2.5.1 **Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. *(Indicate applicable limits of coverage or other conditions in the fill point below.)*

« »

[ « » ] § A.2.5.2 **Other Insurance**  
*(List below any other insurance coverage to be provided by the Owner and any applicable limits.)*

Coverage	Limits
----------	--------

## ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

### § A.3.1 General

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

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

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

### § A.3.2 Contractor's Required Insurance Coverage

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

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

« »

### § A.3.2.2 Commercial General Liability

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

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

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

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

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

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

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than « » (\$ « ») each accident, « » (\$ « ») each employee, and « » (\$ « ») policy limit.

§ A.3.2.7 Jones Act and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

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

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than « » (\$ « ») per claim and « » (\$ « ») in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than « » (\$ « » ) per claim and « » (\$ « » ) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

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

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

« »

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

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

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

« »

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

Coverage

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:  
(Specify type and penal sum of bonds.)

Type	Penal Sum (\$0.00)
Payment Bond	
Performance Bond	

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

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

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

<< >>

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**SECTION 00 54 13  
SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2017**

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

**ARTICLE 3: DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

3.1 Delete paragraph 3.1 in its entirety and replace with the following:

"The date of Commencement of the Work shall be a date set forth in a notice to proceed issued by the Owner."

**ARTICLE 5: PAYMENTS**

5.1 PROGRESS PAYMENTS

5.1.3 Delete paragraph 5.1.3 in its entirety and replace with the following:

"Provided that a valid Application for Payment is received by the Architect that meets all requirements of the Contract, payment shall be made by the Owner not later than 30 days after the Owner receives the valid Application for Payment."

5.3 Insert the interest rate of "1% per month not to exceed 12% per annum."

**ARTICLE 6: DISPUTE RESOLUTION**

6.2 BINDING DISPUTE RESOLUTION

Check Other – and add the following sentence:

"Any remedies available in law or in equity."

**ARTICLE 7: TERMINATION or SUSPENSION**

7.1.1 Delete paragraph 7.1.1 in its entirety.

**ARTICLE 8: MISCELLANEOUS PROVISIONS**

8.4 Delete paragraph 8.4 in its entirety and replace with the following:

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

**END OF SECTION**

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**SECTION 00 54 14**  
**SUPPLEMENT TO A101-2017 – EXHIBIT A INSURANCE AND BONDS**

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2017 Exhibit A Insurance and Bonds. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

**ARTICLE A.2 OWNER'S INSURANCE**

A.2.1 General

Delete paragraph A.2.1 in its entirety.

A.2.2 Liability Insurance

Delete paragraph A.2.2 in its entirety, except in the case of school projects this paragraph shall remain.

A.2.3 Required Property Insurance

Delete paragraph A.2.3 in its entirety.

A.2.4 Optional Extended Property Insurance

Delete paragraph A.2.4 in its entirety.

A.2.5 Other Optional Insurance

Delete paragraph A.2.5 in its entirety.

**ARTICLE A.3 CONTRACTORS INSURANCE AND BONDS**

A.3.1.3 Additional Insured Obligations

In the first sentence after "coverage to include (1)" delete "(1) the Owner,".

Strike the remainder of the first sentence beginning at the semicolon "; and (2) the Owner" through the end of the sentence.

Delete the second sentence in its entirety.

A.3.3.2.1 Delete paragraph 3.3.2.1 in its entirety and replace with the following:

Property Insurance of the same type and scope satisfying the requirements identified in Section A.2.3, The Contractor shall comply with all obligations of the Owner under A.2.3 except to the extent provided below. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required.

**END OF SECTION**

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**SECTION 00 61 13.13  
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 Office of Management and Budget (“**Owner**”), 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. MJ1002000042 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:

END OF SECTION

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**SECTION 00 61 13.16  
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 Office of Management and Budget (“**Owner**”), 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. MJ1002000042 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:

**END OF SECTION**

SECTION 00 62 76

APPLICATION AND CERTIFICATE FOR PAYMENT

The Application and Certificate for Payment are as stated in the American Institute of Architects Document AIA G702 & AIA G703 (1992 version) entitled Application and Certificate for Payment and is part of this project manual as if herein written in full. A draft sample has been included for reference.

END OF SECTION

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## Application and Certificate for Payment

<b>TO OWNER:</b> State of Delaware	<b>PROJECT:</b>	<b>APPLICATION NO:</b> 001 <b>PERIOD TO:</b> <b>CONTRACT FOR:</b> <b>CONTRACT DATE:</b> <b>PROJECT NOS:</b> / /	<b>Distribution to:</b> OWNER: <input checked="" type="checkbox"/> ARCHITECT: <input type="checkbox"/> CONTRACTOR: <input checked="" type="checkbox"/> FIELD: <input type="checkbox"/> OTHER: <input type="checkbox"/>
<b>FROM CONTRACTOR:</b>	<b>VIA ARCHITECT:</b> DEDC, LLC 315 S. Chapel Street Newark, DE 19711		

### 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
<b>5. RETAINAGE:</b>		
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
<b>TOTALS</b>	<b>\$ 0.00</b>	<b>\$ 0.00</b>
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® Document G703™ - 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: N/A

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)	H BALANCE TO FINISH (C - G)	I 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

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**ALLOWANCE AUTHORIZATION**

**Project:**

**Architect:**

**Project No.**

**Contractor:**

**AAA No.:**

**Initiation Date:**

**The Allowance is allocated as follows:**

Total original Contract Allowance was:	\$
Amount of Contract Allowance Access previously authorized:	\$
Adjusted Contract Allowance prior to this authorization is:	\$
The amount of available Allowance will Decrease by this Access Authorization:	\$
The remaining Contract Allowance, after this Access Authorization will be:	\$

**Recommended by:**  
**Architect**

By (Signature): \_\_\_\_\_  
Date: \_\_\_\_\_

**Accepted by:**  
**Contractor**

By (Signature): \_\_\_\_\_  
Date: \_\_\_\_\_

**Approved by:**  
**Owner**

By (Signature): \_\_\_\_\_  
Date: \_\_\_\_\_

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### CLOSEOUT FORMS

The Contract Closeout Forms to be used for this Contract are listed below. Draft samples of the AIA forms indicated have been included for reference.

—	00 65 16	Certificate of Substantial Completion Form	(AIA G704-2017)
—	00 65 19.13	Affidavit of Payment of Debts and Claims Form	(AIA G706-1994)
—	00 65 19.16	Affidavit of Release of Liens Form	(AIA G706A-1994)
—	00 65 19.19	Consent of Surety to Final Payment Form	(AIA G707-1994)

END OF SECTION

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Certificate of Substantial Completion

PROJECT: (name and address) testing
CONTRACT INFORMATION: Contract For: General Construction Date:
CERTIFICATE INFORMATION: Certificate Number: Date:
OWNER: (name and address) ARCHITECT: (name and address) CONTRACTOR: (name and address)

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

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

WARRANTIES

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

WORK TO BE COMPLETED OR CORRECTED

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

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

Cost estimate of Work to be completed or corrected: \$

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

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

CONTRACTOR (Firm Name) SIGNATURE PRINTED NAME AND TITLE DATE

OWNER (Firm Name) SIGNATURE PRINTED NAME AND TITLE DATE

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

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

PROJECT: *(Name and address)*  
testing

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR: General Construction  
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:

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

## Contractor's Affidavit of Release of Liens

PROJECT: <i>(Name and address)</i> testing	ARCHITECT'S PROJECT NUMBER:	OWNER: <input type="checkbox"/>
	CONTRACT FOR: General Construction	ARCHITECT: <input type="checkbox"/>
TO OWNER: <i>(Name and address)</i>	CONTRACT DATED:	CONTRACTOR: <input type="checkbox"/>
		SURETY: <input type="checkbox"/>
		OTHER: <input type="checkbox"/>

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:

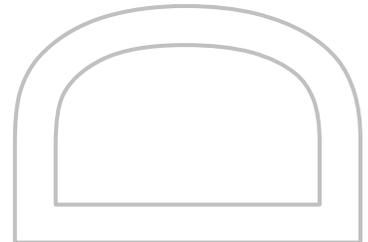
\_\_\_\_\_  
*(Signature of authorized representative)*

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

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:



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

## Consent Of Surety to Final Payment

PROJECT: <i>(Name and address)</i> testing	ARCHITECT'S PROJECT NUMBER:	OWNER: <input type="checkbox"/>
	CONTRACT FOR: General Construction	ARCHITECT: <input type="checkbox"/>
TO OWNER: <i>(Name and address)</i>	CONTRACT DATED:	CONTRACTOR: <input type="checkbox"/>
		SURETY: <input type="checkbox"/>
		OTHER: <input type="checkbox"/>

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)*

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

Attest:  
(Seal):

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SECTION 00 72 13

GENERAL CONDITIONS TO THE CONTRACT

The General Conditions of this Contract are as stated in the American Institute of Architects Document AIA A201 (2017 Edition) entitled General Conditions of the Contract for Construction as revised by the Supplementary General Conditions (00 73 13) and is part of this project manual as if herein written in full.

END OF SECTION

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# DRAFT AIA® Document A201™ - 2017

## General Conditions of the Contract for Construction

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

«testing»  
«»

THE OWNER:  
(Name, legal status and address)

« »« »  
« »

THE ARCHITECT:  
(Name, legal status and address)

« »« »  
« »

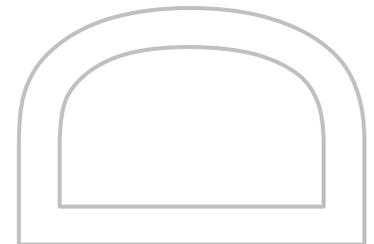
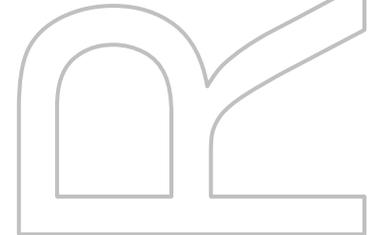
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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

#### § 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

#### § 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### § 1.1.3 The Work

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

#### § 1.1.4 The Project

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

#### § 1.1.5 The Drawings

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

#### § 1.1.6 The Specifications

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

#### § 1.1.7 Instruments of Service

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

#### § 1.1.8 Initial Decision Maker

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

### § 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

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

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

### § 1.3 Capitalization

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

### § 1.4 Interpretation

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

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

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

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

### § 1.6 Notice

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

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

### § 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

### § 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk

and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## ARTICLE 2 OWNER

### § 2.1 General

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

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

### § 2.2 Evidence of the Owner's Financial Arrangements

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

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

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

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

### § 2.3 Information and Services Required of the Owner

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

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

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

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

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

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

#### § 2.4 Owner's Right to Stop the Work

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

#### § 2.5 Owner's Right to Carry Out the Work

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

### ARTICLE 3 CONTRACTOR

#### § 3.1 General

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

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

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

#### § 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These

obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

### § 3.3 Supervision and Construction Procedures

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

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

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

### § 3.4 Labor and Materials

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

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

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

### § 3.5 Warranty

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

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

### § 3.6 Taxes

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

### § 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

### § 3.7.4 Concealed or Unknown Conditions

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

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

### § 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

### § 3.9 Superintendent

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

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

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

### § 3.10 Contractor's Construction and Submittal Schedules

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

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

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

### § 3.11 Documents and Samples at the Site

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

### § 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and

other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

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

### § 3.13 Use of Site

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

### § 3.14 Cutting and Patching

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

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

### § 3.15 Cleaning Up

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

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

### § 3.16 Access to Work

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

### § 3.17 Royalties, Patents and Copyrights

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

### § 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent

acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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

## ARTICLE 4 ARCHITECT

### § 4.1 General

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

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

### § 4.2 Administration of the Contract

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

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

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

### § 4.2.4 Communications

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

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise

such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

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

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

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

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

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

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

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

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

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

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

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

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

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

## § 5.3 Subcontractual Relations

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

## § 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

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

### § 6.2 Mutual Responsibility

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

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

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

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

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

### § 6.3 Owner's Right to Clean Up

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

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 General

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

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

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

### § 7.2 Change Orders

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

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

### § 7.3 Construction Change Directives

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

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

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

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

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

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

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

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

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

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

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

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

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### ARTICLE 8 TIME

#### § 8.1 Definitions

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

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

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

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

#### § 8.2 Progress and Completion

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

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

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

### § 8.3 Delays and Extensions of Time

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

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

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

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 Contract Sum

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

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

### § 9.2 Schedule of Values

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

### § 9.3 Applications for Payment

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

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

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

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

and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

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

#### § 9.4 Certificates for Payment

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

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

#### § 9.5 Decisions to Withhold Certification

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

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

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

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

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

## § 9.6 Progress Payments

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

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

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

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

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

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

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

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

## § 9.7 Failure of Payment

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

## § 9.8 Substantial Completion

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

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

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

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

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

## § 9.9 Partial Occupancy or Use

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

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

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

## § 9.10 Final Completion and Final Payment

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

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

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

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

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

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

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

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

### § 10.2 Safety of Persons and Property

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

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

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

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings

against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

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

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

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

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

#### § 10.2.8 Injury or Damage to Person or Property

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

#### § 10.3 Hazardous Materials and Substances

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

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

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

(other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

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

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

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

#### § 10.4 Emergencies

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

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 Contractor's Insurance and Bonds

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

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

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

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

#### § 11.2 Owner's Insurance

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

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to

provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

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

### **§ 11.3 Waivers of Subrogation**

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

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

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

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

### **§11.5 Adjustment and Settlement of Insured Loss**

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

**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner

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

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 Uncovering of Work

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

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

### § 12.2 Correction of Work

#### § 12.2.1 Before Substantial Completion

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

#### § 12.2.2 After Substantial Completion

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

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

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

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

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

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for

correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 Acceptance of Nonconforming Work

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

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

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

### § 13.2 Successors and Assigns

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

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

### § 13.3 Rights and Remedies

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

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

### § 13.4 Tests and Inspections

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

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

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

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

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

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

### § 13.5 Interest

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

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

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

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

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

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

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

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

### § 14.3 Suspension by the Owner for Convenience

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

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

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

### § 14.4 Termination by the Owner for Convenience

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

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

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

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

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

#### § 15.1.1 Definition

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

#### § 15.1.2 Time Limits on Claims

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

### § 15.1.3 Notice of Claims

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

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

### § 15.1.4 Continuing Contract Performance

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

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

### § 15.1.5 Claims for Additional Cost

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

### § 15.1.6 Claims for Additional Time

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

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

### § 15.1.7 Waiver of Claims for Consequential Damages

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

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

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

### § 15.2 Initial Decision

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

and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

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

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

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

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

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

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

### § 15.3 Mediation

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

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

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

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

#### § 15.4 Arbitration

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

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

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

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

#### § 15.4.4 Consolidation or Joinder

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

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

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

**SECTION 00 73 13**  
**SUPPLEMENTARY GENERAL CONDITIONS A201-2017**

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2017. Where a portion of the General Conditions is modified or deleted by the Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
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**ARTICLE 1: GENERAL PROVISIONS**

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Strike the last sentence of Section 1.1.1 in its entirety and replace with the following:

“The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor’s completed Bid and the Award Letter.”

Add the following Section:

“1.1.1.1 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware, Division of Facilities Management shall take precedence over all other documents.”

1.1.8 INITIAL DECISION MAKER

Strike the last sentence of Section 1.1.8 in its entirety and add the following to the end of the remaining sentence:

“ and certify termination of the Agreement under Section 14.2.2.”

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1.1 Insert “if possible” at the end of the second sentence.

Add the following Sections:

“1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect’s interpretation.”

“1.2.5 The word “PROVIDE” as used in the Contract Documents shall mean “FURNISH AND INSTALL” and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.”

“1.2.6 The word “PRODUCT” as used in the Contract Documents means all materials, systems and equipment.”

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Strike Section 1.5.1 in its entirety and replace with the following:

“All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors, and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect’s consultants appropriate to and

for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier 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 Architect's consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp."

Strike Section 1.5.2 in its entirety.

1.7 DIGITAL DATA USE AND TRANSMISSION

Strike Section 1.7 in its entirety and replace with the following:

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

1.8 BUILDING INFORMATION MODELS USE AND RELIANCE

Strike Section 1.8 in its entirety.

**ARTICLE 2: OWNER**

2.2 EVIDENCE OF THE OWNERS FINANCIAL ARRANGEMENTS

Strike Section 2.2 in its entirety.

2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.3.3 Strike 2.3.3 in its entirety.

2.3.4 Add the following sentence at the end of the paragraph:

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

Strike Section 2.3.6 in its entirety and replace with the following:

"2.3.6 The Contractor shall be furnished free of charge (1) electronic set of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling."

2.5 OWNER'S RIGHT TO CARRY OUT THE WORK

Add ", except as outlined in Section 3.15" after the reference to "Article 15" at the end of the last sentence of the Section.

**ARTICLE 3: CONTRACTOR**

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.2 Add "and Owner" after "report to the Architect" in the second sentence.

3.2.4 Strike "subject to Section 15.1.7" in the second sentence.

3.2.4 Strike the third sentence.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Sections:

"3.3.2.1 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."

"3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials, or as otherwise identified by the specifications. Consult the Owner and the Architect before storing any materials."

"3.3.5 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."

3.4 LABOR AND MATERIALS

Add the Following Sections:

"3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the Architect & Owner of any defects or imperfections in preparatory Work which 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."

"3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times."

3.5 WARRANTY

Add the following Sections:

"3.5.3 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 warranty."

"3.5.4 Defects appearing during the period of warranty 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 warranty will have elapsed."

"3.5.5 Upon notification by the Owner of a defect covered by the Contractor's warranty, the Contractor shall respond within 4 hours of the notification."

"3.5.6 In addition to the General Warranty there are other warranties 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 warranties will commence at the same time as the General Warranty."

"3.5.7 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."

### 3.8 ALLOWANCES

Add the following Section:

"3.8.1.1 For costs to be covered under a project allowance, (included in the schedule of values) the Contractor shall submit a summary of those costs anticipated and an Allowance Access Authorization Form to the Architect and Owner, reflecting the projected costs. The Allowance Access Authorization Form must be signed by the Owner prior to initiating any work associated with the allowance."

### 3.10 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

3.10.1 Add "estimated" after "and the" and before "date of" in the second sentence.

3.10.2 Strike "and thereafter as necessary to maintain a current submittal schedule" in the first sentence.

3.10.4 The Contractor's construction and submittal schedules shall be in accordance with DFM – Supplemental Project Scheduling Guidelines.

### 3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Sections:

"3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark 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."

"3.11.2 At the completion of the project, the Contractor shall obtain a set of the conformed contract drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions."

"3.11.3 Upon completion of the work noted in 3.11.2 the contractor shall schedule a meeting with the Architect/Engineer and Owner to review the final record drawings and closeout documents prior to submission. After this meeting the Contractor shall make adjustments per the review, and submit one (1) original markup and (2) copies of the red line drawings (as-built conditions, to the Owner and one (1) print to the Architect. In addition, attach one complete set of the as-built documents to each of the Operating and Maintenance Instructions/Manuals. The Contractor will include (2) USB drives, each

containing all “red line drawings (as-built) and Closeout Documents properly tabbed in accordance with closeout requirements as defined elsewhere in the contract documents.”

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.10.2 Strike “If the Contract Documents require” from the beginning of the sentence.

3.12.10.2 Strike “to” between “professional” and certify” and replace with “shall”.

3.17 Insert “indemnify and” between “shall” and “hold” in the second sentence.

**ARTICLE 4: ADMINISTRATION OF THE CONTRACT**

4.2 ADMINISTRATION OF THE CONTRACT

4.2.7 Strike the first sentence and replace with the following:

“The Architect will review and approve or take other appropriate action upon the Contractor’s submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.”

4.2.7 Strike the second sentence and replace with the following:

“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.”

Add the following Section:

“4.2.10.1 There will be no full-time Project Representative provided by the Owner or Architect on this project.”

“4.2.13 Add “and in compliance with all local requirements.” to the end of the sentence.”

**ARTICLE 5: SUBCONTRACTORS**

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.3 Strike Section 5.2.3 in its entirety and replace with the following:

“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.”

5.2.4 Strike Section 5.2.4 in its entirety and replace with the following:

“The Contractor may not substitute any Subcontractor listed in its Bid unless the Contractor complies with the requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4. Failure to comply with this requirement shall subject the Contractor to a penalty as outlined in Section 5.2 of the Owner’s General Requirements.”

Add the following Section:

"5.2.5 The Contractor shall comply and shall ensure all Subcontractors comply with all requirements for drug testing as set forth in TITLE 19 LABOR DELAWARE ADMINISTRATIVE CODE 4000 Office of Management and Budget 4100 Division of Facilities Management **4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects.**"

#### **ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

- 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS
  - 6.1.1 Strike "and waiver of subrogation" from the end of the second sentence.
  - 6.1.4 Strike Section 6.1.4 in its entirety.
- 6.2 MUTUAL RESPONSIBILITY
- 6.2.3 Strike "shall" and replace with "may" in the second sentence.

#### **ARTICLE 7: CHANGES IN THE WORK**

(SEE ARTICLE 7: CHANGES IN WORK IN THE STATE OF DELAWARE DIVISION OF FACILITIES MANAGEMENT GENERAL REQUIREMENTS)

- 7.3.4.1 Strike "and other employee costs approved by the Architect" after "worker's compensation insurance."
- 7.3.4.4 Add "work attributable to the" before "change" at the end of the sentence.
- 7.4 MINOR CHANGES IN WORK  
Add "unless such changes are approved" at the end of the third sentence.

#### **ARTICLE 8: TIME**

- 8.2 PROGRESS AND COMPLETION
  - 8.2.1 Add the following Section:
    - "8.2.1.1 Refer to Project Specifications Section SUMMARY OF WORK for Contract time requirements."
  - 8.2.2 After "by the Contractor" strike "and" and insert "to".
  - 8.2.4 Add the following Section:
    - "8.2.4 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."

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike "binding dispute resolution" and insert "any and all remedies at law or in equity".

Add the following Section:

"8.3.2.1 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."

Strike Section 8.3.3 in its entirety and replace with the following:

8.3.3 "Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Section 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."

Add the following Section:

"8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract."

**ARTICLE 9: PAYMENTS AND COMPLETION**

9.2 SCHEDULE OF VALUES

Add the following Sections:

"9.2.1 The Schedule of Values shall be submitted using AIA Document G703, Continuation Sheet to G702."

"9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1.5% of the initial contract amount."

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Strike Section 9.3.1 in its entirety and replace with the following:

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

Add the following Sections:

"9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized."

“9.3.4 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.”

“9.3.5 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.”

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following Subsections to 9.5.1:

- .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.

9.6 PROGRESS PAYMENTS

9.6.1 Strike Section 9.6.1 in its entirety and replace with the following:

“9.6.1 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.”

9.6.8 Strike “Provided the Owner has fulfilled its payment obligations under the Contract Documents,” in the first sentence.

9.7 FAILURE OF PAYMENT

Strike Section 9.7 in its entirety and replace with the following:

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

9.8 SUBSTANTIAL COMPLETION

9.8.3 At the end of Section 9.8.3, add the following sentence:

“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.”

9.8.5 Strike “shall” and insert “may” in the second sentence.

9.8.5 Insert “1/2 of the” after “make payment of” in the second sentence.

- 9.9 PARTIAL OCCUPANCY OR USE
- 9.9.1 Strike the the first sentence and replace with the following (the remainder of the Section remains as written):  
“The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use authorized by public authorities having jurisdiction over the Project.”
- 9.10.2 Strike “to remain in force after final payment is currently in effect” after “required by the Contract Documents” and replace with “shall remain in force until final payment is completed” in the first sentence.
- 9.10.4.4 Strike “if permitted by the Contract Documents,”

**ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY**

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Sections:

- 10.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.
- 10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Section:

- 10.2.4.1 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.
- 10.2.5 Strike the second sentence in its entirety.
- 10.3 HAZARDOUS MATERIALS AND SUBSTANCES
- 10.3.3 Strike Section 10.3.3 in its entirety.
- 10.3.4 Insert “hazardous” in the last sentence after “handling of such” .
- 10.3.6 Strike Section 10.3.6 in its entirety.

**ARTICLE 11: INSURANCE AND BONDS**

11.1 CONTRACTOR'S INSURANCE AND BONDS

11.1.1 Strike "Owner" from the the third sentence .

11.2 OWNER'S LIABILITY INSURANCE

Strike 11.2 in its entirety, except that in the case of school projects in which case Section 11.2 shall remain.

11.3 WAIVERS OF SUBROGATION

Delete Section 11.3 in its entirety

11.4 LOSS OF USE, BUSINESS INTERRUPTION, AND DELAY IN COMPLETION INSURANCE

Delete Section 11.4 in its entirety

**ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**

12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Section:

"12.2.2.1.1 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 non-conforming work and that required under contract including any damage to the structure."

12.2.2.1 Strike all references to "one year" or "one-year" and replace with "two years".

12.2.2.2 Strike "one-year" and replace with "two years".

12.2.2.3 Strike "one-year" and replace with "two years".

12.2.5 Strike "one-year" and replaced with "two years".

**ARTICLE 13: MISCELLANEOUS PROVISIONS**

13.1 GOVERNING LAW

Strike the last sentence.

13.4 TESTS AND INSPECTIONS

13.4.1 Strike the last sentence and replace with the following:

"The Owner shall pay for tests, inspections, or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor."

13.5 INTEREST

Strike “the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located” and replace with “30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month.”

Insert the following Section:

**“13.6 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS**

13.6.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery.”

**ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT**

14.1 TERMINATION BY THE CONTRACTOR

14.1.1.4 Insert “, upon the Contractors’ request,” after “furnish to the Contractor” .

14.1.3 Strike “and profit on Work not executed, and” after “as well as reasonable overhead” and replace with “, profit, and reasonable”

14.3 SUSPENSION BY OWNER FOR CONVENIENCE

14.3.2 Strike “Adjustment of the Contract Sum shall include profit”.

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.3 Strike Section 14.4.3 in its entirety and replace with the following:

“In case of such termination for the Owner’s convenience, the Contractor shall be entitled to receive payment for Work executed, and reasonable costs incurred by reason of such termination along with reasonable overhead.”

**ARTICLE 15: CLAIMS AND DISPUTES**

15.1 CLAIMS

15.1.2 TIME LIMITS ON CLAIMS

Strike the last sentence.

15.1.3 NOTICE OF CLAIM

Strike all references to “21” and replace with “45”.

15.1.5 CLAIMS FOR ADDITIONAL COSTS

Strike the first sentence and replace with the following:

“Contractor shall not proceed to execute any portion of the Work that is subject to the Claim without prior approval of the costs or method of payment for the costs associated with the Claim as determined by the Architect and approved by the Owner.”

15.1.7 WAIVER OF CLAIMS FOR CONSEQUENTIAL DAMAGES

Strike Section 15.1.7 in its entirety.

15.2 INITIAL DECISION

15.2.1 Strike “and binding dispute resolution” in the fourth sentence and replace with “or any and all remedies at law or in equity”.

15.2.5 Strike Section 15.2.5 in its entirety and replace with the following:

“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. The approval or rejection of a Claim by the Architect shall be subject to mediation and any or all remedies at law or in equity.”

15.2.6 Strike Section 15.2.6 and its subSections in their entirety.

15.3 MEDIATION

15.3.1 Strike “binding dispute resolution” and replace with “any or all remedies at law or in equity”.

15.3.2 Strike “, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement,” in the first sentence.

15.3.2 Strike all references to “binding dispute resolution” and replace with “any or all remedies at law and in equity”.

15.3.3 Strike Section 15.3.3 in its entirety.

15.4 ARBITRATION

Strike Section 15.4 and its Subsections in their entirety.

END OF SECTION

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**SECTION 00 73 13.10**  
**SUPPLEMENTARY GENERAL CONDITIONS - SCHEDULE GUIDELINES**

The following provides supplemental direction on the establishment and maintenance of the Contractors construction and submittal schedules

**Preliminary Schedule:**

**Initial Schedule.**

**Within 10 Days of the date of Award, the contractor shall submit a preliminary schedule**

The owner will use the initial schedule to monitor progress until the baseline schedule is accepted. Prepare and submit a schedule for the first 60 calendar days of work in accordance with subsections 3.1 and 3.2, plus a summary bar chart schedule for the balance of the project. Activity durations on the summary chart may not exceed 15 working days.

**3. Schedule Submission Requirements.**

Submit the following items:

3.1.1 A transmittal letter to the owner identifying which schedule in the database is being submitted for review .1 A narrative report

**3.2 Preparing Schedule on Separate Database.** If the schedule is prepared using Primavera Version 6.0, Primavera for Contractors, or some other software compatible with Primavera Version 6.0, then, for each schedule submission, submit the following items:

3.2.1 A transmittal letter

3.2.2 A narrative report

3.2.3 A Primavera Version 6.0 compatible electronic file of the schedule on a computer disc (CD)

3.2.4 The critical path in bar chart format (Longest Path sort)

3.2.5 Work paths with total float values within 20 workdays of the critical path's total float value in bar chart format. For example, if the critical path has a total float value of zero, then show all of the work paths with total float values of 20 or less.

3.2.6 An activity network diagram plotted in color, on E-size paper, with each sheet of the plot including a title, match data for diagram correlation, a page number, and a legend. The activity network diagram should only be submitted with schedules with revised relationships or activity durations.

3.2.7 A Predecessor/Successor report with the following items for each activity:

3.2.7.1 Activity ID and description

3.2.7.2 Original duration

3.2.7.3 Remaining duration

3.2.7.4 Calendar ID

3.2.7.5 Predecessors and Successors

3.2.7.6 Early start date

- 3.2.7.7 Early finish date
- 3.2.7.8 Late start date
- 3.2.7.9 Late finish date
- 3.2.7.10 Total float
- 3.2.7.11 Relationship type
- 3.2.7.12 Lags
- 3.2.7.13 Constraints

### **Baseline Schedule**

**The contractor shall submit a Baseline (Initial) CPM (Critical Path Method) Schedule for use in coordinating and monitoring the Work specified in the Contract documents.**

The schedule will include activities for long lead and other major submittal/procurement/delivery items as well as activities for installing and constructing the specified Work. It will indicate the starting and finishing dates of all activities. The baseline schedule shall have 0 progress. The Data Date will be the date of the project's 'Commencement.' Once accepted, the Contractor shall adhere to the schedule with adjustments accepted in subsequent progress schedules. Updated (Progress) Schedules shall be submitted as directed by the Owner.

### **Purpose of Project Schedules**

The Project Schedules shall be used for evaluating all issues related to time for this Contract. The Project Schedules shall be used by the Owner and Contractor for the following purposes as well as any other purpose where the issue of time is relevant:

- To communicate to the Owner the Contractor's current plan for carrying out the Work;
- To identify work paths that are critical to the timely completion of the Work,
- To identify upcoming activities on the critical path(s);
- To evaluate the best course of action for mitigating the impact of unforeseen events;
- As the basis for analyzing the time impact of changes in the Work,
- As a reference in determining the cost associated with increases or decreases in the Work;
- To identify and prioritize activities, for which the Owner is responsible;
- To document the actual progress of the Work;
- To integrate the Work with the operational requirements of the Owner's facilities;
- To schedule and coordinate interfaces with adjacent contracts;
- As a basis for determining valid acceleration plans; and
- To facilitate efforts to complete the Work in a timely manner.
- To validate contract requirements for the commissioning process have been incorporated by the contractor into the schedule

The Project Schedules provide a basis for Owner decisions that may impact the Work under this Contract. The Contractor shall submit schedule submittals in a timely manner. The Project Schedules shall at all times accurately reflect the Contractor's current plan for the Work and shall be updated as described in this specification and elsewhere in the project documents.

**Baseline and Progress Schedule Submittals** - All Progress Schedules shall be submitted as a complete package, including all supporting narrative, and reports as required. Incomplete packages will be considered not submitted

## PROJECT SCHEDULING SOFTWARE

The Project Schedule shall employ the Critical Path Method (CPM) using retained logic for the planning, scheduling and reporting of the work to be performed under the Contract. The schedule will be produced utilizing any version of Oracle's Primavera Project Planning Software or any other software system fully transferable to any Oracle Primavera project planning and scheduling software system. The scheduling software used by the Contractor shall be fully capable of importing/exporting data to/from Oracle Primavera software. The proposed software shall be capable of transferring the information without degradation in the data, including, but not limited to, scheduling logic and sequencing, activities, durations, cost loading, calendars, etc. The type of schedule shall be PDM (Precedence Diagramming Method).

Along with a legible PDF rendition of the project's network, all schedules shall be submitted in CPM format (xer in Oracle's P6 Software) fully compatible with Oracle's P6 Software via email or flash drive as a single compressed database. If electronic submission is used, it is the Contractor's responsibility to verify that the documents submitted are in a format compatible with the Owner's and Architect's and that the submission has been received by the Owner and Architect.

## SCHEDULING DEFINITIONS AND REQUIREMENTS

**Activity Constraints** - Activity Constraints can only be used if specified by the Contract or agreed to by the Owner. For example, if a Phase of the project must be completed by a specific date, that activity for completion of the Phase shall be "Constrained" to that date specified. The use of negative lags or the use of any other float suppression techniques is also prohibited from use in project schedules.

**Activity Dates** - Early and Late start and Finish dates of activities shall be calculated for each activity based upon the schedule data date, actual dates, % completes, schedule logic, schedule constraints, calendars, and original duration or remaining duration, in accordance with the scheduling parameters defined in this specification.

**Activity Description** - The activity description shall identify the unique scope of the activity. There shall not be any two activities with the same activity description. It shall not be necessary to investigate activity code assignments or logic relationships to identify the scope of an activity. For example, the description "POUR FOOTING" will not be acceptable; the description "POUR FOOTING RAMP RT-Sta. 42+00-42+50" will be acceptable. At the same time the Activity Description shall be concise enough so as to not require excessive column width in the Oracle Primavera P6 layout. The terms "Miscellaneous", or other vague adjectives shall not be used in an activity description. All activity descriptions shall include a verb. Activity descriptions shall not be modified, except at the direction or with the consent of the Owner.

**Activity Duration** - All activity durations shall be reflected in Calendar Days. Unless otherwise specified or approved, all construction activities shall have durations not exceeding 14 calendar days. The Contractor shall substantiate the need for specific activities having longer durations than stated herein. Once accepted, Original Durations of activities shall not be modified without explicit approval by the Owner.

**Activity Identification** - Each activity in the Project Schedules shall have an activity identifier (Activity ID). The Contractor shall utilize an Activity ID that is simple and allows space between existing activities for the future addition of activities for continuing sort and display capability. The Activity ID of an existing activity shall not be modified or assigned to another activity. The scope of work for an activity shall not be substantially changed once the Baseline Schedule is accepted.

**Activity Predecessors and Successors** - Every activity shall have logically assigned predecessors and successors. The logical predecessors for each activity will be limited to those activities whose

scope of work necessarily must be completed or, in some instances, started, in order to perform the current activity. Unless otherwise specified, Commencement/Notice To Proceed shall be the only activity in the Project Schedule without a predecessor. Unless otherwise specified, Contractual substantial completion shall be the only activity in the Project Schedule without a successor.

**Activity Percent Complete** - Activity percent complete shall be entered in the Project Schedule by the Contractor as appropriate to indicate activity progress and status as of the current Data Date for the update.

**Activity Relationships** - The schedule CPM logic for each activity shall be constructed in conformance with the following requirements:

- **Determine predecessors** - Activities that must be completed before the activity can start.
- **Determine parallel activities** - Activities that can occur concurrently with the activity.
- **Determine successors** - Activities that cannot start until the activity is complete.

**Baseline Schedule** - The Baseline Schedule comprises the plan and schedule that the Contractor intends to use to perform and complete the Work. Upon acceptance by the Owner, the Baseline Schedule shall be the schedule of record for the project until subsequent updated (progress) schedules are accepted by the Owner.

**Calendars** - Calendars shall be developed and assigned to each activity. All durations should be reflected in calendar days. A calendar that incorporates unanticipated adverse weather (see **Weather**) shall be assigned to activities that may be affected by adverse weather conditions. A calendar that incorporates a 7-day workweek shall be developed and assigned to appropriate activities (concrete cure, contractual substantial completion milestone, etc. Other calendars (including incorporation of Federal and State observed holidays) appropriate for the scoped contract work shall be developed and assigned to appropriate activities.

**Critical Path** - The Critical Path is defined as the longest continuous series of activities through the network to the Substantial Completion Deadline.

**Critical Path Method (CPM)** - The Critical Path Method (CPM) is a scheduling technique that utilizes activity durations and network logic to calculate the schedule for an entire project. A CPM schedule is a network-based schedule that graphically depicts the timing of activities, interrelationships between the activities, and the project critical path. Every project, regardless of size or complexity, has a critical path; however, only a critical path schedule identifies the critical path.

**Written Narrative** - A Narrative is a written document which provides an outline of the plan on which the schedule is based. This document is submitted along with any project Schedule and is used to communicate problems encountered throughout the progress period along with the overall plan to complete the remaining Work.

**Data Date** - The day after the date through which a schedule is current. Everything occurring earlier than the Data Date is "as-built" and everything on or after the Data Date is "planned".

**Milestone Activities** - An activity with zero duration that typically represents a significant event, such as the beginning and end of a project, milestones set forth in the Contract, construction stages, a major work package, Substantial Completion Date and Final Completion Date.

**Recovery Schedule** – If at any point during the course of the project the Architect, Owner, or the Owner's scheduling consultant determines that there is slippage in the Project finish forecast, Scope Addition, or Omission or a change in the Construction Methodology or Constructability method, the contractor may be required to produce a **Recovery Schedule** that reflects an adjustment in project durations, resources, or other methodology to show completion of the project within the required duration or completion date established. The Recovery Schedule shall have the same requirements for submission as that of the baseline schedule.

**Schedule Progress Updates** - Schedule Progress Updates are submitted monthly (or as directed by the Owner) by the Contractor to update the Current Baseline Schedule with status during the period of the update and to reflect the Contractor's current plan for performing the remaining Work. Each Contractor's Application for Payment must be accompanied by an approved Construction Schedule Update as precedent for payment.

1. Submission of any Schedule Updates must include all required documents. No partial schedule submissions will be acknowledged. The Date of the submittal and the start of the review will commence only after a complete submission is made to the Architect and copied to the Owner and the Owner's Scheduling Consultant where applicable.
2. No new activity shall be added, nor shall any existing activity be modified in any schedule update to imply specific responsibility of delays or extensions to the associated duration of any tasks that have not been approved and documented in the form of an official Change Order to the contract.

**Submittal and Procurement Activities** – Activities detailing material submittals to include manufacturers product data, shop drawings, samples, etc. Provide a duration of at least 21 calendar days for activities required for review and approval of working drawings and materials by the Owner.

The Contractor shall include separate activities for each required submittal item in coordination with the Submittal Schedule. Activities shall be added for each to reflect:

1. **Contractor Submittal** - Early and late finish dates shall reflect the dates upon which the contractor must submit a complete submittal package to the Architect to avoid delay to successive activities.
2. **Architect Review and Approval** – This reflects the appropriate time frame for the review and approval of the submittal package. Duration as noted above should be no less than 21 calendar days.
3. **Order Materials/Equipment** – Reflects the dates that materials must be ordered to avoid delay to the project. Duration should reflect the appropriate lead time required as verified by the material and equipment suppliers
4. **Material/Equipment Delivered**. Reflects the dates required in order that the material is delivered to the site without delaying associated installation activities.

The Contractor's response to any Rejected Submittal requiring revision and resubmission is due within 3 days of the receipt of requirement for resubmission.

**Total Float** - Total Float (TF) for an activity shall be defined as the number of days from the Early Finish date (EF) to the Late Finish date (LF) of the activity. Total Float shall be calculated relative to the Contractual Substantial Completion Deadline. **Total Float is the difference between the schedule's finish date and the contract completion date.** Float is not for the exclusive use or benefit of either the Owner or the Contractor, but is an expiring resource available to all parties, acting in good faith, as needed to meet the Substantial Completion Deadline.

**WBS – Work Breakdown Structure** – is defined as “a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables.”

**Weather** – Depending on the type of work, some projects (or several activities in most projects) will be more apt to be affected by adverse weather conditions than others. The contractor shall prepare and submit a calendar that reflects the (5) year average of weather delays for each month based on NOAA (National Oceanic and Atmospheric Administration) or similar data acceptable to the Owner. After review of the historical data, and once the Owner and the Contractor agree on the (5) year average for each month, this calendar will act as the reference toward determining adverse weather delays to the project.

In the event the weather experienced at the project site during a particular month, surpasses the reflected (5) year historical average agreed upon for the similar month, the Contractor shall submit a time impact analysis reflecting the delays caused to critical path activities. If the weather delays reported by the contractor for the period exceed the average for the similar month as indicated in historical data, the Contractor may be granted a non-compensable time extension to account for those days impacted by the unusually severe weather. No time extensions will be granted for delays affecting activities not on the critical path.

## WRITTEN NARRATIVES

### Baseline Schedule Narrative

The Baseline Schedule narrative shall demonstrate a feasible approach to achieving the work as planned in the accompanying schedule. It should provide the following information:

1. Identification of the Data Date and schedule file name.
2. A description of the planned flow of work, identifying all key or driving resources.
3. A summary of planned labor utilization for the Contract.
4. A summary of planned equipment utilization for the Contract.
5. An explanation of how adverse weather conditions have been addressed in the Baseline Schedule.
6. The narrative shall address the Contractor's material procurement plan and identify the strategy for any long lead item(s).
7. The narrative shall indicate the sequence of contract required commissioning activities

### Schedule Progress Update Narrative

Update submittal packages shall include a narrative containing the following information:

1. Identification of the update period, the Data Date, and the schedule file name.
2. Identification of activities with critical float that were planned to occur during the update period, of which did not occur or occurred later than the scheduled Late Start or Late Finish date, and an explanation of these delays.
3. Identification of delays occurring to activities taking place off the Project site, e.g., submittal preparation, fabrication, and delivery activities.
4. A summary of planned labor utilization for the Contract.
5. Revisions to logic or duration(s) by the Contractor: These revisions shall contain the following

information:

- a. Identification of the activities changed.
- b. description of the scope of the logic change and identification of the advantages and disadvantages of implementing the change.
- c. Identification of all driving resources, if any.
- d. Identification of key constraints influencing the Contractor's approach to the Work.

### **Changes and Time Impact Analysis**

The Contractor shall develop and submit a time impact analysis and a Proposed Schedule Update when one or more of the following conditions occur:

- a. The Contractor's plan for the Work as reflected in the Current Baseline Schedule is materially changed;
- b. The Owner has approved a Change Order that affects the Critical Path of the Work necessitating an adjustment in a Completion Deadline;
- c. The Contractor's progress on the Work is behind the Substantial Completion date by thirty (30) Days or more;
- d. In the Owner's opinion, the Current Baseline Schedule no longer accurately reflects the Contractor's plan for performing the Work;
- e. The Contractor is required by the Contract or chooses to submit a time impact analysis demonstrating entitlement to an adjustment to a Completion Deadline or to submit a plan demonstrating how the Contractor intends to recover delay; or
- f. Any allowable change has occurred according to the Contract.
- g. Unless otherwise agreed to by the Owner, Contractor's requests for additional cost and/or time associated with any change to the scope of work shall be submitted to the Owner within 7 days of the associated direction from the Owner or Architect. In accordance with State law, no work can proceed on any changed scope that would constitute an increase in cost or time prior to written approval by the owner including the associated increase to the contractors purchase order where additional cost is merited.
- h. With the exception of providing Actual Completion dates for activities, in any Schedule update or Time Impact Analysis, no new activities should be added, and no existing activities should be changed without prior submission, to and approval of the owner.
- i. Activities associated with time delays - All changes to activities in any schedule update or Time Impact Analysis shall be detailed, providing the activity number, name, and reference to the approval of the change or addition of the activity by the Owner in the narrative accompanying that schedule submission.
- j. No new activity shall be added, nor shall any existing activity be modified to imply specific responsibility of delays or extensions to the associated duration of any tasks that have not been approved and documented in the form of an official Change Order to the contract.

### **Contractor's Responsibility**

It is the Contractor's responsibility to ensure that all Project Schedule documents comply with the requirements of the Contract. Errors in any Project Schedule document accepted by the Owner, including but not limited to activity durations, relationships between activities, resource allocation or other float suppression techniques that do not accurately reflect the Work, may be identified at any time and once identified, shall be corrected by the Contractor. The Owner is not responsible for any erroneous assumptions or information in any Project Schedule document, regardless of origin.

**Project Milestones - Unless specific milestones for this project are otherwise identified in the project documents, the Contractor shall prepare and submit for review and approval by the Owner/ Architect, individual milestones appropriate to identify key areas of the work.**

**The Owner and/or Architect may request additional milestones and/or activities be added in order to allow for efficient tracking of the work of the project.**

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**SECTION 00 73 46  
WAGE RATE DETERMINATION SCHEDULE**

The Delaware Department of Labor Division of Industrial Affairs has established the category and associated prevailing wage rate for this project. The project approved prevailing wage rate determination schedule follows:

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STATE OF DELAWARE  
 DEPARTMENT OF LABOR  
 DIVISION OF INDUSTRIAL AFFAIRS  
 OFFICE OF LABOR LAW ENFORCEMENT  
 PHONE: (302) 761-8200

Mailing Address:  
 4425 North Market Street  
 3rd Floor  
 Wilmington, DE 19802

Located at:  
 4425 North Market Street  
 3rd Floor  
 Wilmington, DE 19802

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 13, 2020

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	24.35	29.99	43.65
BOILERMAKERS	72.91	36.99	54.38
BRICKLAYERS	57.94	57.94	57.94
CARPENTERS	56.46	56.46	44.83
CEMENT FINISHERS	76.91	53.57	23.61
ELECTRICAL LINE WORKERS	48.43	41.53	31.66
ELECTRICIANS	72.49	72.49	72.49
ELEVATOR CONSTRUCTORS	99.43	88.69	34.03
GLAZIERS	77.25	77.25	60.35
INSULATORS	59.68	59.68	59.68
IRON WORKERS	67.70	67.70	67.70
LABORERS	49.20	49.20	49.20
MILLWRIGHTS	66.83	76.83	61.93
PAINTERS	53.71	53.71	53.71
PILEDRIVERS	41.92	41.92	33.90
PLASTERERS	31.79	31.79	23.56
PLUMBERS/PIPEFITTERS/STEAMFITTERS	72.05	56.29	62.21
POWER EQUIPMENT OPERATORS	73.29	73.29	73.29
ROOFERS-COMPOSITION	25.58	25.24	23.05
ROOFERS-SHINGLE/SLATE/TILE	19.59	23.29	18.32
SHEET METAL WORKERS	75.03	75.03	75.03
SOFT FLOOR LAYERS	54.59	54.59	54.59
SPRINKLER FITTERS	61.83	61.83	61.83
TERRAZZO/MARBLE/TILE FNRS	66.75	66.75	66.75
TERRAZZO/MARBLE/TILE STR	74.02	74.02	74.02
TRUCK DRIVERS	32.77	29.22	22.75

CERTIFIED BY: [Signature]  
 ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) ~~761-8200~~ 761-8200

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: MJ100200042 Carvel State Office Building - Piping Riser Replacement, New Castle County

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**SECTION 00 81 13  
GENERAL REQUIREMENTS**

**TABLE OF ARTICLES**

1. GENERAL PROVISIONS
2. OWNER
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5. SUBCONTRACTORS
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7. CHANGES IN THE WORK
8. TIME
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13. MISCELLANEOUS PROVISIONS
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**ARTICLE 1: GENERAL**

1.1 CONTRACT DOCUMENTS

1.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.1.2 Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.2 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1.2.1 For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity 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.
2. 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, sex, color, sexual orientation, gender identity or national origin."

**ARTICLE 2: OWNER**

(NO ADDITIONAL GENERAL REQUIREMENTS – SEE SUPPLEMENTARY GENERAL CONDITIONS)

**ARTICLE 3: CONTRACTOR**

- 3.1 Schedule of Values: The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.
- 3.2 Subcontracts: Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.
- 3.3 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.
- 3.4 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.
- 3.5 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 3.6 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If

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

3.7 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.

3.8 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.

3.9 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees and other persons performing portions of the Work under contract with the Contractor.

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

#### 3.11 STATE LICENSE AND TAX REQUIREMENTS

3.11.1 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."

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

3.13 During the contract Work, the Contractor and each Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects". "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

### ARTICLE 4: ADMINISTRATION OF THE CONTRACT

#### 4.1 CONTRACT SURETY

##### 4.1.1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

4.1.2 All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.

4.1.3 Contents of Performance Bonds – The bond shall be in the form approved by the Office of Management and Budget. 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 material or performing labor in the performance of the Contract, of all sums of money due the person for such labor and material. (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.)

4.1.4 Invoking a Performance Bond – The agency may, when it considers that the interest of the State so requires, cause judgement to be confessed upon the bond.

4.1.5 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 duplicate.

4.1.6 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.

#### 4.2 FAILURE TO COMPLY WITH CONTRACT

4.2.1 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.

#### 4.3 CONTRACT INSURANCE AND CONTRACT LIABILITY

4.3.1 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.

4.3.2 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.

4.4 RIGHT TO AUDIT RECORDS

4.4.1 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.

4.4.2 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.

**ARTICLE 5: SUBCONTRACTORS**

5.1 SUBCONTRACTING REQUIREMENTS

5.1.1 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.

5.1.2 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.

5.1.3 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.

5.1.4 No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:

- A. Is unqualified to perform the work required;
- B. Has failed to execute a timely reasonable Subcontract;
- C. Has defaulted in the performance on the portion of the work covered by the Subcontract; or
- D. Is no longer engaged in such business.

5.1.5 Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such 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. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.1.6 The Contractor may employ additional Subcontractors on the jobsite only after submitting a copy of the Subcontractor's Employee Drug Testing Program to the Owner for approval. A Contractor or Subcontractor shall not commence work until the Owner has concluded its review and determined that the submitted Employee Drug Testing Program complies with OMB Regulation 4104.

## 5.2 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

5.2.1 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

## 5.3 ASBESTOS ABATEMENT

5.3.1 The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget, Division of Facilities Management pursuant to Chapter 78 of Title 16.

## 5.4 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

5.4.1 All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

## 5.5 CONTRACT PERFORMANCE

- 5.5.1 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.

**ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS**

- 6.1 The Owner reserves the right to simultaneously perform other 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 Projects at the same site.
- 6.2 The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

**ARTICLE 7: CHANGES IN THE WORK**

- 7.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.
- 7.2 The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.
- 7.3 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.
- 7.3.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes prevailing wage rates plus a maximum multiplier of 1.35 times DPE. For example, if the prevailing wage rate is \$50/hour, the DPE would be \$67.50/hour (50 x 1.35).
- 7.3.2 "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.
- 7.3.3 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.

**ARTICLE 8: TIME**

8.1 Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.

8.2 If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.

8.3 Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.4 SUSPENSION AND DEBARMENT

8.4.1 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."

8.4.2 "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."

8.5 RETAINAGE

8.5.1 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.

- 8.5.2 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.

**ARTICLE 9: PAYMENTS AND COMPLETION**

9.1 APPLICATION FOR PAYMENT

- 9.1.1 Applications for payment shall be made upon AIA Document G702. There will be a 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.

- 9.1.2 A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.

- 9.1.3 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.

9.2 PARTIAL PAYMENTS

- 9.2.1 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.

- 9.2.2 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.

- 9.2.2.1 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.

- 9.2.3 If requested by the Agency, receipted bills from all Contractors, 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.

9.3 SUBSTANTIAL COMPLETION

- 9.3.1 When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.

- 9.3.2 If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and

accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.

9.3.3 On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

#### 9.4 FINAL PAYMENT

9.4.1 Final payment, including the five percent (5%) retainage if determined appropriate, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

9.4.1.1 Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,

9.4.1.2 An acceptable RELEASE OF LIENS,

9.4.1.3 Copies of all applicable warranties,

9.4.1.4 As-built drawings,

9.4.1.5 Operations and Maintenance Manuals,

9.4.1.6 Instruction Manuals,

9.4.1.7 Consent of Surety to final payment.

9.4.1.8 The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

#### ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

10.2 The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.

- 10.3 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials 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 warning caution 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 any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with the shipping slips that include those products.
- 10.4 The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

#### ARTICLE 11: INSURANCE AND BONDS

- 11.1 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.
- 11.2 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.
- 11.3 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.
- 11.4 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.
- 11.5 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, may 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.
- 11.6 Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.
- 11.7 The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:
- 11.7.1 Contractor's Contractual Liability Insurance
- Minimum coverage to be:

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

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

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

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

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

11.7.4 Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.

11.7.5 Workmen's Compensation (including Employer's Liability):

11.7.5.1 Minimum Limit on employer's liability to be as required by law.

11.7.5.2 Minimum Limit for all employees working at one site.

11.7.6 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.

11.7.7 Social Security Liability

11.7.7.1 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.

11.7.7.2 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.

- 11.7.7.3 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.

## **ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**

- 12.1 The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.
- 12.2 At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

## **ARTICLE 13: MISCELLANEOUS PROVISIONS**

### **13.1 CUTTING AND PATCHING**

- 13.1.1 The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

### **13.2 DIMENSIONS**

- 13.2.1 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.

### **13.3 LABORATORY TESTS**

- 13.3.1 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.
- 13.3.2 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.

### **13.4 ARCHAEOLOGICAL EVIDENCE**

- 13.4.1 Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the State Historic Preservation Office and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation by the Division of Historical and Cultural Affairs.

13.5 GLASS REPLACEMENT AND CLEANING

13.5.1 The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.6 WARRANTY

13.6.1 For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

**ARTICLE 14: TERMINATION OF CONTRACT**

14.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.

14.2 "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

END OF SECTION

**DRUG TESTING FORMS**

The Office of Management and Budget (OMB) has developed the 4014 regulations as part of the Delaware Code that requires Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds pursuant to 29 **Del.C.** 6908(a)6). The regulations establish the mechanism, standards and requirements of a Mandatory Drug Testing Program that will be incorporated by reference into this Contract awarded pursuant to 29 **Del.C.** 6962. Sample copies of Testing report Forms maintained and/or submitted pursuant to the requirements of 4104 regulations for this Project are included herewith.

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**EMPLOYEE DRUG TESTING REPORT FORM**

**Period Ending:** \_\_\_\_\_

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds maintain testing data that includes but is not limited to the data elements below.

Project Number: \_\_\_\_\_

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

Contractor/Subcontractor Name: \_\_\_\_\_

Contractor/Subcontractor Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Number of employees who worked on the jobsite during the report period: \_\_\_\_\_

Number of employees subject to random testing during the report period: \_\_\_\_\_

Number of Negative Results \_\_\_\_\_ Number of Positive Results \_\_\_\_\_

Action taken on employee(s) in response to a failed or positive random test:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

This form is not required to be submitted to the Owner. Included as a reference to show information required to be maintained by the Contractor. The Owner shall have the right to periodically audit all Contractor and Subcontractor test results at the Contractor's or Subcontractor's offices (or by other means to make the data available for inspection by the Owner).

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**EMPLOYEE DRUG TESTING  
REPORT OF POSITIVE RESULTS**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds to notify the Owner in writing of a positive random drug test.

Project Number: \_\_\_\_\_

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

Contractor/Subcontractor Name: \_\_\_\_\_

Contractor/Subcontractor Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name of employee with positive test result: \_\_\_\_\_

Last 4 digits of employee SSN: \_\_\_\_\_

Date test results received: \_\_\_\_\_

Action taken on employee in response to a positive test result:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Authorized Representative of Contractor/Subcontractor: \_\_\_\_\_  
(typed or printed)

Authorized Representative of Contractor/Subcontractor: \_\_\_\_\_  
(signature)

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

**This form shall be sent by mail to the Owner within 24 hours of receipt of test results.**

**Enclose this test results form in a sealed envelope with the notation "Drug Testing Form – DO NOT OPEN" on the face thereof and place in a separate mailing envelope.**

**END OF SECTION**

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**AFFIDAVIT OF  
CRAFT TRAINING COMPLIANCE**

We, the contractor, hereby certify that we and all applicable subcontractors will abide by the contractor and subcontractor craft training requirements outlined below for the duration of the contract. Craft training must be provided by a contractor and/or subcontractor for each craft on a project for which there are Delaware Department of Labor approved and registered training programs. A list of crafts for which there are approved and registered training programs is maintained by the Delaware Department of Labor and can be found at [https://det.delawareworks.com/apprenticeship/documents/Apprenticeship Occupation List for 29Del6962 Compliance.pdf](https://det.delawareworks.com/apprenticeship/documents/Apprenticeship_Occupation_List_for_29Del6962_Compliance.pdf) If you have questions regarding craft training programs, please submit them in writing to the Delaware Department of Labor at: [apprenticeship@delaware.gov](mailto:apprenticeship@delaware.gov). The Craft Training Compliance Affidavit must be submitted prior to contract execution. In addition to this Affidavit, all information pertaining to craft training for subcontractors must also be submitted prior to contract execution. Information to be provided is the craft, company name, registration number (indicate DE, US DOL or identify other state) or that craft training requirements do not apply and the reason.

In accordance with Title 29, Chapter 69, Section 6962(d)(13) of the Delaware Code, contractors and subcontractors must provide craft training for journeyman and apprentice levels if **all** of the following apply:

- A. A project meets the prevailing wage requirement under Title 29, Chapter 69, Section 6960 of the Delaware Code.
- B. The contractor employs 10 or more total employees.
- C. The project is not a federal highway project

Failure to provide required craft training on the project may subject the successful contractor and/or subcontractor(s) to penalties as outlined in Title 29, Chapter 69, Section 6962(d)(13) of the Delaware Code.

**Craft(s)** \_\_\_\_\_

**Contractor Name:** \_\_\_\_\_

**Contractor Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Contractor Program  
Registration Number(s)** \_\_\_\_\_

On this line also indicate whether DE, Other State (identify) or US Registration Number

Or

**Craft Training requirements are not applicable because:** \_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

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

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

THIS PAGE MUST BE SIGNED AND NOTARIZED TO BE CONSIDERED.

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**SECTION 01 10 00**  
**SUMMARY**

**PART 1 GENERAL**

**1.01 PROJECT**

- A. Project Name: Carvel State Office Building - Piping Riser Replacement.
- B. Owner's Name: State of Delaware OMB - Division of Facilities Management - Carvel State Office Building
- C. The Project consists of the replacement of the vertical piping risers to include sanitary, vent, domestic water, fire protection, and storm drainage at the Carvel State Office Building located at 820 North French Street in Wilmington, Delaware.

**1.02 CONTRACT DESCRIPTION**

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

**1.03 DESCRIPTION OF WORK**

- A. Plumbing: Alter existing system and add new construction, keeping existing in operation.
- B. Fire Suppression Sprinklers: Alter existing system and add new construction, keeping existing in operation.

**1.04 OWNER OCCUPANCY**

- A. State of Delaware OMB - Division of Facilities Management intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. State of Delaware OMB - Division of Facilities Management intends to occupy the Project upon Substantial Completion.
- C. State of Delaware OMB - Division of Facilities Management intends to occupy a certain portion of the Project prior to the completion date for the conduct of normal operations.
- D. Cooperate with State of Delaware OMB - Division of Facilities Management to minimize conflict and to facilitate continuation of normal State of Delaware OMB - Division of Facilities Management's operations.
- E. Schedule the Work to accommodate State of Delaware OMB - Division of Facilities Management occupancy.

**1.05 CONTRACTOR USE OF SITE AND PREMISES**

- A. Provide access to and from site as required by law and by State of Delaware OMB - Division of Facilities Management:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code clear and open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- B. Utility Outages and Shutdown:
  - 1. Limit disruption of utility services to hours the building is unoccupied.
  - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 14 notice to State of Delaware OMB - Division of Facilities Management and authorities having jurisdiction.
  - 3. Prevent accidental disruption of utility services to other facilities.

**1.06 PROJECT WORK HOURS**

- A. Contractor day work hours on this project shall be from 8:00 a.m. to 4:30 p.m. Monday through Friday unless otherwise noted. Contractors to coordinate work schedule with State Holidays. Contractor shall not work on site during State holidays unless otherwise noted by the Owner.

- B. Contractor night work hours on this project shall be from 7:00 p.m. to 5:00 a.m. Monday through Thursday unless otherwise noted. Contractors to coordinate work schedule with State Holidays. Contractor shall not work on site during State holidays unless otherwise noted by the Owner.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 20 00**  
**PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Change procedures.

**1.02 SCHEDULE OF VALUES**

- A. Forms to be used: AIA G703.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to DEDC, LLC for approval.
- C. Forms shall be typed. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 5 days after date of Pre-Construction Meeting.
- E. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- F. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to DEDC, LLC for approval.
- C. Forms shall be typed. Forms filled out by hand will not be accepted.
- D. Execute certification by signature of authorized officer.
- E. Submit one electronic and three hard copies of each Application for Payment.
- F. Include the following with the application:
  - 1. OMB/DFM Project Number.
  - 2. Contractors Purchase Order Number from the State.
  - 3. Transmittal letter as specified for submittals in Section 01 30 00.

**1.04 MODIFICATION PROCEDURES**

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, DEDC, LLC will issue instructions directly to Contractor.
- B. For other required changes, DEDC, LLC will issue a document signed by State of Delaware OMB - Division of Facilities Management instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, DEDC, LLC will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 5 days.
- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- E. Execution of Change Orders: DEDC, LLC will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

- F. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- G. Promptly revise progress schedules to reflect any change in Contract Time, and revise sub-schedules to adjust times for other items of work affected by the change.
- H. Promptly enter changes in Project Record Documents.

**1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 01 70 00.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 21 00  
ALLOWANCES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Contingency allowance.

**1.02 RELATED REQUIREMENTS**

- A. State of Delaware Front End Documents Division 0
- B. Section 01 20 00 - Price and Payment Procedures: Additional payment and modification procedures.

**1.03 CONTINGENCY ALLOWANCE**

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- B. Funds will be drawn from the Contingency Allowance only by Approved Allowance Authorization Form or Change Order.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

**1.04 ALLOWANCES SCHEDULE**

- A. Contingency Allowance: Include the stipulated sum/price of \$50,000 for use upon Owner's instructions for miscellaneous items found during construction.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 30 00**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Progress photographs.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Submittal procedures.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
- B. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.
- C. Section 01 91 13 - General Commissioning Requirements: Additional procedures for submittals relating to commissioning.
  - 1. Where submittals are indicated for review by both DEDC, LLC and the Commissioning Authority, submit one extra and route to DEDC, LLC first, for forwarding to the Commissioning Authority.
  - 2. Where submittals are not indicated to be reviewed by DEDC, LLC, submit directly to the Commissioning Authority; otherwise, the procedures specified in this section apply to commissioning submittals.

**1.03 GENERAL ADMINISTRATIVE REQUIREMENTS**

- A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

**1.04 PROJECT COORDINATOR**

- A. Project Coordinator: State of Delaware's Project Manager and DEDC.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 10 00 - Summary.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to DEDC, LLC through the Project Coordinator:
  - 1. Requests for Interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Manufacturer's instructions and field reports.

6. Applications for payment and change order requests.
7. Progress schedules.
8. Coordination drawings.
9. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. State of Delaware OMB - Division of Facilities Management will schedule a meeting after Notice of Award.
- B. Attendance Required:
  1. State of Delaware OMB - Division of Facilities Management.
  2. DEDC, LLC.
  3. Contractor.
- C. Agenda:
  1. Execution of State of Delaware OMB - Division of Facilities Management-Contractor Agreement.
  2. Designation of personnel representing the parties to Contract, State of Delaware, Contractor, Subcontractors, and DEDC, LLC.
  3. Designation of personnel representing the parties to Contract, owner, and DEDC, LLC.
  4. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  5. Scheduling.

**3.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the work at maximum bi-weekly intervals.
- B. DEDC, LLC will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
  1. Contractor.
  2. State of Delaware OMB - Division of Facilities Management.
  3. DEDC, LLC.
  4. Contractor's superintendent.
  5. Major subcontractors.
- D. Contractor shall provide a 3-week look ahead schedule in writing at each meeting and be prepared to review with attendees.
- E. Agenda:
  1. Review minutes of previous meetings.
  2. Review of work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede, or will impede, planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Maintenance of progress schedule.
  7. Review contractor's 3 week look ahead schedule.
  8. Corrective measures to regain projected schedules.
  9. Planned progress during succeeding work period.
  10. Maintenance of quality and work standards.
  11. Effect of proposed changes on progress schedule and coordination.
  12. Other business relating to work.

### 3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. If preliminary construction progress schedule requires revision after review, submit revised schedule within 10 days.
- B. Within 20 days after review of preliminary construction progress schedule, submit draft of proposed final schedule for review.
  - 1. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- C. Within 10 days after joint review, submit final schedule.
- D. Submit updated schedule with each Application for Payment.

### 3.04 PROGRESS PHOTOGRAPHS

- A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.
- B. Photography Type: Digital; electronic files.
- C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to DEDC, LLC.
- D. In addition to periodic, recurring views, take photographs of each of the following events:
- E. Views:
  - 1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
  - 2. Consult with DEDC, LLC for instructions on views required.
  - 3. Provide factual presentation.
  - 4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
- F. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
  - 1. Delivery Medium: On photo CD.
  - 2. File Naming: Include project identification, date and time of view, and view identification.
  - 3. Point of View Sketch: Include digital copy of point of view sketch with each electronic submittal; include point of view identification in each photo file name.

### 3.05 COORDINATION DRAWINGS

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
  - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Show location and size of access doors required for access to concealed valves.
    - c. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

### 3.06 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.

2. Shop drawings.
  3. Samples for selection.
  4. Samples for verification.
- B. Submit to DEDC, LLC for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

### 3.07 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
1. Design data.
  2. Certificates.
  3. Test reports.
  4. Inspection reports.
  5. Manufacturer's instructions.
  6. Manufacturer's field reports.
  7. Other types indicated.
- B. Submit for DEDC, LLC's knowledge as contract administrator or for State of Delaware OMB - Division of Facilities Management.

### 3.08 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
1. Project record documents.
  2. Operation and maintenance data.
  3. Warranties.
  4. Bonds.
  5. Other types as indicated.
- D. Submit for State of Delaware OMB - Division of Facilities Management's benefit during and after project completion.

### 3.09 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
1. Small Size Sheets, Not Larger Than 8-1/2 by 11 inches: Submit the number of copies that Contractor requires, plus two copies that will be retained by DEDC, LLC.
- B. Documents for Information: Submit one copy.
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. Samples: Submit the number specified in individual specification sections; one of which will be retained by DEDC, LLC.
1. After review, produce duplicates.
  2. Retained samples will not be returned to Contractor unless specifically so stated.

### 3.10 SUBMITTAL PROCEDURES

- A. General Requirements:
1. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.

2. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
3. Schedule submittals to expedite the Project, and coordinate submission of related items.
  - a. For each submittal for review, allow 21 days excluding delivery time to and from the Contractor.
  - b. For sequential reviews involving DEDC, LLC's consultants, State of Delaware OMB - Division of Facilities Management, or another affected party, allow an additional 7 days.
  - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to DEDC, LLC's approval, allow an additional 30 days.
- B. Shop Drawing Procedures:
  1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
  2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- C. Transmit each submittal with a copy of approved submittal form.
- D. Transmit each submittal with approved form.
- E. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- F. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- G. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- H. Deliver submittals to DEDC, LLC at business address.
- I. Schedule submittals to expedite the Project, and coordinate submission of related items.
- J. For each submittal for review, allow 21 days excluding delivery time to and from the Contractor.
- K. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- L. Provide space for Contractor and DEDC, LLC review stamps.
- M. When revised for resubmission, identify all changes made since previous submission.
- N. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- O. Submittals not requested will not be recognized or processed.

**END OF SECTION**

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**SECTION 01 32 33**  
**PHOTOGRAPHIC DOCUMENTATION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
1. Preconstruction photographs.
  2. Periodic construction photographs.
  3. Final completion construction photographs.
- B. Related Requirements:
1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project Closeout.
  2. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  3. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
  4. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
1. Submit photos by uploading to web-based project software site. Include copy of key plan indicating each photograph's location and direction.
  2. Identification: Provide the following information with each image description in web-based project software site:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of location, vantage point, and direction.

- g. Unique sequential identifier keyed to accompanying key plan.

#### 1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

#### 1.5 FORMATS AND MEDIA

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

#### 1.6 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs with maximum depth of field and in focus.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Preconstruction Photographs: Before commencement of excavation take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
  - 1. Flag construction limits before taking construction photographs.
  - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
  - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- C. Periodic Construction Photographs: Take 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.
- D. Final Completion Construction Photographs: Take 50 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.
- E. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.
  - 1. Three days' notice will be given, where feasible.

2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:
  - a. Special events planned at Project site.
  - b. Immediate follow-up when on-site events result in construction damage or losses.
  - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
  - d. Substantial Completion of a major phase or component of the Work.
  - e. Extra record photographs at time of final acceptance.
  - f. Owner's request for special publicity photographs.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

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**SECTION 01 40 00**  
**QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Submittals.
- B. Testing and inspection agencies and services.
- C. Control of installation.
- D. Manufacturers' field services.
- E. Defect Assessment.
- F. Warranty

**1.02 RELATED REQUIREMENTS**

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

**1.03 REFERENCE STANDARDS**

- A. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2014.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for DEDC, LLC's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for State of Delaware OMB - Division of Facilities Management's information.
- C. Test Reports: After each test/inspection, promptly submit two copies of report to DEDC, LLC and to Contractor.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test/inspection.
    - h. Date of test/inspection.
    - i. Results of test/inspection.
    - j. Compliance with Contract Documents.
    - k. When requested by DEDC, LLC, provide interpretation of results.

**1.05 TESTING AND INSPECTION AGENCIES AND SERVICES**

- A. State of Delaware OMB - Division of Facilities Management will employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from DEDC, LLC before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### 3.02 TESTING AND INSPECTION

- A. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with DEDC, LLC and Contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 4. Promptly notify DEDC, LLC and Contractor of observed irregularities or non-compliance of Work or products.
  - 5. Perform additional tests and inspections required by DEDC, LLC.
  - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify DEDC, LLC and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 6. Arrange with State of Delaware OMB - Division of Facilities Management's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by DEDC, LLC.
- E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

### 3.03 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

### 3.04 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of DEDC, LLC, it is not practical to remove and replace the work, DEDC, LLC will direct an appropriate remedy or adjust payment.

### 3.05 WARRANTY

- A. 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.
- B. 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.
- C. 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.
- D. 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.
- E. For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

**END OF SECTION**

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**SECTION 01 60 00**  
**PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution "or Equal" limitations and procedures.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

**1.02 RELATED REQUIREMENTS**

- A. Document Instructions to Bidders: Product options and substitution procedures prior to bid date.
- B. Section 01 10 00 - Summary:
- C. Section 01 40 00 - Quality Requirements: Product quality monitoring.
- D. Section 01 74 19 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

**1.03 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 SUBMITTALS**

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

**PART 2 PRODUCTS**

**2.01 EXISTING PRODUCTS**

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

- E. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is not prohibited.
  - 1. See Section 01 10 00 for list of items required to be salvaged for reuse and relocation.

## 2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
  - 1. Made using or containing CFC's or HCFC's.
- C. Where other criteria are met, Contractor shall give preference to products that:
  - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
  - 2. Have longer documented life span under normal use.
  - 3. Result in less construction waste. See Section 01 74 19
  - 4. Are made of vegetable materials that are rapidly renewable.
- D. Provide interchangeable components of the same manufacture for components being replaced.
- E. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.

## 2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with this specification.

## 2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

## PART 3 EXECUTION

### 3.01 SUBSTITUTION LIMITATIONS

- A. The intent of this process is to allow for manufacturers not listed to provide an "Equal" product to DEDC, LLC for review and approval. This process must take place prior to award of bid.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to State of Delaware OMB - Division of Facilities Management.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 5. Has investigated proper clearances and working spaces for substituted equipment and waives claims for additional costs or time extension that may subsequently become apparent. These physical differences must be pointed out at the time of the submittal.

### 3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.03 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 74 19.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**

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**SECTION 01 70 00**  
**EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of State of Delaware OMB - Division of Facilities Management personnel.
- H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- I. General requirements for maintenance service.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- D. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- E. Section 01 79 00 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections.
- F. Section 01 91 13 - General Commissioning Requirements: Contractor's responsibilities in regard to commissioning.
- G. Section 07 84 00 - Firestopping.

**1.03 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of State of Delaware OMB - Division of Facilities Management or separate Contractor.
  - 6. Include in request:
    - a. Identification of Project.
    - b. Location and description of affected work.
    - c. Necessity for cutting or alteration.
    - d. Description of proposed work and products to be used.
    - e. Effect on work of State of Delaware OMB - Division of Facilities Management or separate Contractor.

- f. Written permission of affected separate Contractor.
- g. Date and time work will be executed.

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

### 1.05 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
  - 1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
  - 2. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

### 1.06 COORDINATION

- A. See Section 01 10 00 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After State of Delaware OMB - Division of Facilities Management occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of State of Delaware OMB - Division of Facilities Management's activities.

## PART 2 PRODUCTS

### 2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

#### **3.02 PREPARATION**

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

#### **3.03 PREINSTALLATION MEETINGS**

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

#### **3.04 GENERAL INSTALLATION REQUIREMENTS**

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

#### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to DEDC, LLC before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.

- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
  - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
  - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- C. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Relocate items indicated on drawings.
  - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. See Section 01 10 00 for other limitations on outages and required notifications.
    - c. Provide temporary connections as required to maintain existing systems in service.
  - 4. Verify that abandoned services serve only abandoned facilities.
  - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
  - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

### 3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Fit products together to integrate with other work.
  - 3. Provide openings for penetration of mechanical, electrical, and other services.
  - 4. Match work that has been cut to adjacent work.
  - 5. Repair areas adjacent to cuts to required condition.
  - 6. Repair new work damaged by subsequent work.
  - 7. Remove samples of installed work for testing when requested.
  - 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.
- J. Patching:
  - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  - 2. Match color, texture, and appearance.
  - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### 3.07 PROGRESS CLEANING

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

### 3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

### **3.09 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### **3.10 DEMONSTRATION AND INSTRUCTION**

- A. See Section 01 79 00 - Demonstration and Training.

### **3.11 ADJUSTING**

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### **3.12 FINAL CLEANING**

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

### **3.13 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to DEDC, LLC.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify DEDC, LLC when work is considered ready for DEDC, LLC's Substantial Completion inspection.

- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for DEDC, LLC's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing DEDC, LLC's and Contractor's comprehensive list of items identified to be completed or corrected and submit to DEDC, LLC.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to State of Delaware OMB - Division of Facilities Management-occupied areas.
- G. Notify DEDC, LLC when work is considered finally complete and ready for DEDC, LLC's Substantial Completion final inspection.
- H. Complete items of work determined by DEDC, LLC listed in executed Certificate of Substantial Completion.

**END OF SECTION**

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**SECTION 01 73 00**  
**EXECUTION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

- 1. Cutting and patching.

- B. Related Requirements:

- 1. Section 011000 "Summary" for coordination of work, and limits on use of Project site.
- 2. Section 013300 "Submittal Procedures" for submitting surveys.
- 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
- 4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
- 5. Section 078400 "Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
  - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  - 3. Products: List products to be used for patching and firms or entities that will perform patching work.

4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
  - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

## 1.5 QUALITY ASSURANCE

- A. Professional Engineer Qualifications: Refer to Section 014000 "Quality Requirements."
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. [Operational elements include the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.
    - e. Plumbing piping systems.
    - f. Mechanical systems piping and ducts.
    - g. Control systems.
    - h. Communication systems.
    - i. Fire-detection and -alarm systems.
    - j. Conveying systems.
    - k. Electrical wiring systems.
    - l. Operating systems of special construction.
  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. Exterior curtain-wall construction.
    - d. Sprayed fire-resistive material.

- e. Equipment supports.
  - f. Piping, ductwork, vessels, and equipment.
  - g. 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.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. 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.

- B. 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, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

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

### 3.3 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb, and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces, unless otherwise indicated on Drawings.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
  - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

#### 3.4 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.

- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. 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 in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. 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 eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
  - I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.
- 3.5 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
  1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.6 STARTING AND ADJUSTING

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

### 3.7 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

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

END OF SECTION 017300

**SECTION 01 74 19**  
**CONSTRUCTION WASTE MANAGEMENT**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section includes: Administrative and procedural requirements for construction waste management activities.

**1.02 DEFINITIONS**

- A. Construction, Demolition, and Land clearing (CDL) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage.
- B. Salvage: Recovery of materials for on-site reuse, sale or donation to a third party.
- C. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Crushing or grinding of concrete for use as sub-base material. Chipping of land clearing debris for use as mulch.
- D. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- E. Source-Separated CDL Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.
- F. Co-mingled CDL Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- G. Approved Recycling Facility: Any of the following:
1. A facility that can legally accept CDL waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
  2. Material Recovery Facility: A general term used to describe a waste-sorting facility.
    - a. Mechanical, hand-separation, or a combination of both procedures, are used to recover
    - b. recyclable materials.

**1.03 SUBMITTALS**

- A. Contractor shall develop a Waste Management Plan: Submit 3 copies of plan within 14 days of date established for the Notice to Proceed.
- B. Contractor shall provide Waste Management Report: Concurrent with each Application for Payment, submit 3 copies of report.

**1.04 PERFORMANCE REQUIREMENTS**

- A. General: Divert a minimum of 75% CDL waste, by weight, from the landfill by one, or a combination of the following activities:
1. Salvage
  2. Reuse
  3. Source-Separated CDL Recycling
  4. Co-mingled CDL Recycling
- B. CDL waste materials that can be salvaged, reused or recycled include, but are not limited to, the following:
1. Acoustical ceiling tiles
  2. Asphalt
  3. Asphalt shingles
  4. Cardboard packaging
  5. Carpet and carpet pad

6. Concrete
7. Drywall
8. Fluorescent lights and ballasts
9. Land clearing debris (vegetation, stumps, dirt)
10. Metals
11. Paint (through hazardous waste outlets)
12. Wood
13. Plastic film (sheeting, shrink wrap, packaging)
14. Window glass
15. Wood
16. Field office waste, including office paper, aluminum cans, glass, plastic, and office cardboard.

#### 1.05 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements, that employs a LEED Accredited Professional, certified by the USGBC as waste management coordinator.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Conduct construction waste management activities in accordance with hauling and disposal regulations of all authorities having jurisdiction and all other applicable laws and ordinances.
- D. Preconstruction Conference: Schedule and conduct meeting at Project site prior to construction activities.
  1. Attendees: Inform the following individuals, whose presence is required, of date and time of meeting.
    - a. Owner
    - b. Architect
    - c. Contractor's superintendent
    - d. Major subcontractors
    - e. Waste Management Coordinator
    - f. Other concerned parties.
  2. Agenda Items: Review methods and procedures related to waste management including, but not limited to, the following:
    - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
    - b. Review requirements for documenting quantities of each type of waste and its disposition.
    - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
    - d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
    - e. Review waste management requirements for each trade.
  3. Minutes: Record discussion. Distribute meeting minutes to all participants.  
Note: If there is a Project Architect, they will perform this role.

#### 1.06 WASTE MANAGEMENT PLAN - CONTACTOR SHALL DEVELOP AND DOCUMENT THE FOLLOWING:

- A. Develop a plan to meet the requirements listed in this section at a minimum. Plan shall consist of waste identification, waste reduction plan and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight throughout the plan.
- B. Indicate anticipated types and quantities of demolition, site-cleaning and construction waste generated by the project. List all assumptions made for the quantities estimates.

- C. List each type of waste and whether it will be salvaged, recycled, or disposed of in an landfill. The plan should included the following information:
1. Types and estimated quantities, by weight, of CDL waste expected to be generated during demolition and construction.
  2. Proposed methods for CDL waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
    - a. Contracting with a deconstruction specialist to salvage materials generated,
    - b. Selective salvage as part of demolition contractor's work,
    - c. Reuse of materials on-site or sale or donation to a third party.
  3. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
    - a. Requiring subcontractors to take their CDL waste to a recycling facility;
    - b. Contracting with a recycling hauler to haul recyclable CDL waste to an approved recycling or material recovery facility;
    - c. Processing and reusing materials on-site;
    - d. Self-hauling to a recycling or material recovery facility.
  4. Name of recycling or material recovery facility receiving the CDL wastes.
  5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on project site where materials separation will be located.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
1. Total quantity of waste.
  2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
  3. Total cost of disposal (with no waste management).
  4. Revenue from salvaged materials.
  5. Revenue from recycled materials.
  6. Savings in hauling and tipping fees by donating materials.
  7. Savings in hauling and tipping fees that are avoided.
  8. Handling and transportation costs. Including cost of collection containers for each type of waste.
  9. Net additional cost or net savings from waste management plan.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 CONSTRUCTION WASTE MANAGEMENT, GENERAL**

- A. Provide containers for CDL waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
- B. The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume.
- C. Provide containers for CDL waste that is disposed in a landfill clearly labeled as such.
- D. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
- E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
- F. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.

**3.02 SOURCE SEPARATION**

- A. General: Contractor shall separate recyclable materials from CDL waste to the maximum extent possible.

Separate recyclable materials by type.

1. Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water and to minimize pest attraction. Cover to prevent windblown dust.
3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from weather.

**3.03 CO-MINGLED RECYCLING**

- A. General: Do not put CDL waste that will be disposed in a landfill into a co-mingled CDL waste recycling container.

**3.04 REMOVAL OF CONSTRUCTION WASTE MATERIALS**

- A. Remove CDL waste materials from project site on a regular basis. Do not allow CDL waste to accumulate on-site.
- B. Transport CDL waste materials off Owner's property and legally dispose of them.
- C. Burning of CDL waste is not permitted.

NOT FOR BIDDING PURPOSES

**WASTE MANAGEMENT PROGRESS REPORT**

MATERIAL CATEGORY	DISPOSED IN MUNICIPAL SOLID WASTE LANDFILL	DIVERTED FROM LANDFILL BY	DIVERTED FROM LANDFILL BY	DIVERTED FROM LANDFILL BY
		RECYCLED	SALVAGED	REUSED
ACOUSTICAL CEILING TILES				
ASPHALT				
ASPHALT SHINGLES				
CARDBOARD PACKAGING				
CARPET AND CARPET PAD				
CONCRETE				
DRYWALL				
FLUORESCENT LIGHTS AND BALLASTS				
LAND CLEARING DEBRIS (VEGETATION, STUMPAGE, DIRT)				
METALS				
PAINT (THROUGH HAZARDOUS WASTE OUTLETS)				
WOOD				
PLASTIC FILM (SHEETING, SHRINK WRAP, PACKAGING)				
WINDOW GLASS				
FIELD OFFICE WASTE (OFFICE PAPER, ALUMINUM CANS, GLASS, PLASTIC, AND COFFEE CARDBOARD)				
OTHER (INSERT DESCRIPTION)				
OTHER (INSERT DESCRIPTION)				
<b>TOTAL (IN WEIGHT)</b>				

PERCENTAGE OF WASTE DIVERTED.  
 (TOTAL WASTE DIVIDED BY TOTAL DIVERTED)

END OF SECTION

NOT FOR BIDDING PURPOSES

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**SECTION 01 78 00**  
**CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Division 00 Documents
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to DEDC, LLC prior to final payment application. The following documents must be submitted.
  - 1. Red line drawings (As-Builts)
    - a. One original paper copy
    - b. Two copies of the original.
- B. Electronic Documentation: Submit the electronic documentation on two copies of long duration archival cd storage devices with gold lacquer finish. The following electronic data shall be included on each CD:
  - 1. Scanned copy of the As-Built in PDF format.
  - 2. Revised AutoCAD (release 2007 or later) drawing. Original copy of the AutoCAD file will be provided upon request.
  - 3. Approved project submittals (PDF Format).
  - 4. Construction Meeting Minutes (PDF Format).
  - 5. Operation and Maintenance Data (PDF Format)
  - 6. Answered RFIs (PDF Format), executed Allowance Authorizations (PDF Format), executed Change Orders (PDF Format), and issued Engineer's Supplemental Instructions (PDF Format).
  - 7. Temporary and Final Certificate of Occupancy (PDF Format).
  - 8. Warranty Letters (PDF Format).
  - 9. Final Balancing Report (PDF Format).
  - 10. Any field or inspection reports (PDF Format) required by the authority having jurisdiction.
  - 11. Final punch list signed off by the contractor (PDF Format).
- C. Operation and Maintenance Data:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. DEDC, LLC will review draft and return one copy with comments.
  - 2. For equipment, or component parts of equipment put into service during construction and operated by State of Delaware OMB - Division of Facilities Management, submit completed documents within ten days after acceptance.
  - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with DEDC, LLC comments. Revise content of all document sets as required prior to final submission.
  - 4. Submit two sets of revised final documents in a 3-ring binder in final form within 10 days after final inspection.
- D. Warranties and Bonds:

1. For equipment or component parts of equipment put into service during construction with State of Delaware OMB - Division of Facilities Management's permission, submit documents within 10 days after acceptance.
2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  1. Drawings.
  2. Specifications.
  3. Addenda.
  4. Change Orders and other modifications to the Contract.
  5. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by State of Delaware OMB - Division of Facilities Management.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  1. Changes made by Addenda and modifications.
- F. Record Drawings: Legibly mark each item to record actual construction including:
  1. Field changes of dimension and detail.
  2. Details not on original Contract drawings.

### **3.02 OPERATION AND MAINTENANCE DATA**

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

### **3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  1. Description of unit or system, and component parts.
  2. Identify function, normal operating characteristics, and limiting conditions.
  3. Include performance curves, with engineering data and tests.
  4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Include test and balancing reports.
- L. Additional Requirements: As specified in individual product specification sections.

### **3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Assemble operation and maintenance data into durable manuals for State of Delaware OMB - Division of Facilities Management's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of DEDC, LLC, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
  - 1. Project Directory.
  - 2. Table of Contents, of all volumes, and of this volume.
  - 3. Operation and Maintenance Data: Arranged by system, then by product category.
    - a. Source data.
    - b. Product data, shop drawings, and other submittals.
    - c. Operation and maintenance data.
    - d. Field quality control data.
    - e. Photocopies of warranties and bonds.

### **3.05 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for

items put into use with State of Delaware OMB - Division of Facilities Management's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

**END OF SECTION**

NOT FOR BIDDING PURPOSES

**SECTION 01 79 00**  
**DEMONSTRATION AND TRAINING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.
- B. Training of State of Delaware OMB - Division of Facilities Management personnel in operation and maintenance is required for:
  - 1. Plumbing equipment.
  - 2. Items specified in individual product Sections.
- C. Training of State of Delaware OMB - Division of Facilities Management personnel in care, cleaning, maintenance, and repair is required for:
  - 1. Items specified in individual product Sections.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 78 00 - Closeout Submittals: Operation and maintenance manuals.
- B. Section 01 91 13 - General Commissioning Requirements: Additional requirements applicable to demonstration and training.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures; except:
  - 1. Make all submittals specified in this section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Authority.
  - 2. Submit one copy to the Commissioning Authority, not to be returned.
  - 3. Make commissioning submittals on time schedule specified by Commissioning Authority.
  - 4. Submittals indicated as "Draft" are intended for the use of the Commissioning Authority in preparation of overall Training Plan; submit in editable electronic format, Microsoft Word 2003 preferred.
- B. Draft Training Plans: State of Delaware OMB - Division of Facilities Management will designate personnel to be trained; tailor training to needs and skill-level of attendees.
  - 1. Submit to DEDC, LLC for transmittal to State of Delaware OMB - Division of Facilities Management.
  - 2. Submit to Commissioning Authority for review and inclusion in overall training plan.
  - 3. Submit not less than four weeks prior to start of training.
  - 4. Revise and resubmit until acceptable.
  - 5. Provide an overall schedule showing all training sessions.
  - 6. Include at least the following for each training session:
    - a. Identification, date, time, and duration.
    - b. Description of products and/or systems to be covered.
    - c. Name of firm and person conducting training; include qualifications.
    - d. Intended audience, such as job description.
    - e. Objectives of training and suggested methods of ensuring adequate training.
    - f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
    - g. Media to be used, such as slides, hand-outs, etc.
    - h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.
- C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
  - 1. Include applicable portion of O&M manuals.
  - 2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.

3. Provide one extra copy of each training manual to be included with operation and maintenance data.
- D. Training Reports:
  1. Identification of each training session, date, time, and duration.
  2. Sign-in sheet showing names and job titles of attendees.
  3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.
  4. Include Commissioning Authority's formal acceptance of training session.
- E. Video Recordings: Submit digital video recording of each demonstration and training session for State of Delaware OMB - Division of Facilities Management's subsequent use.
  1. Format: DVD Disc.
  2. Label each disc and container with session identification and date.

#### 1.04 QUALITY ASSURANCE

- A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
  1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
  2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.01 DEMONSTRATION - GENERAL

- A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by State of Delaware OMB - Division of Facilities Management.
- B. Demonstrations conducted during Functional Testing need not be repeated unless State of Delaware OMB - Division of Facilities Management personnel training is specified.
- C. Demonstration may be combined with State of Delaware OMB - Division of Facilities Management personnel training if applicable.
- D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
  1. Perform demonstrations not less than two weeks prior to Substantial Completion.
  2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
  1. Perform demonstrations not less than two weeks prior to Substantial Completion.

##### 3.02 TRAINING - GENERAL

- A. Commissioning Authority will prepare the Training Plan based on draft plans submitted.
- B. Conduct training on-site unless otherwise indicated.
- C. State of Delaware OMB - Division of Facilities Management will provide classroom and seating at no cost to Contractor.
- D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.
- E. Provide training in minimum two hour segments.
- F. The Commissioning Authority is responsible for determining that the training was satisfactorily completed and will provide approval forms.

- G. Training schedule will be subject to availability of State of Delaware OMB - Division of Facilities Management's personnel to be trained; re-schedule training sessions as required by State of Delaware OMB - Division of Facilities Management; once schedule has been approved by State of Delaware OMB - Division of Facilities Management failure to conduct sessions according to schedule will be cause for State of Delaware OMB - Division of Facilities Management to charge Contractor for personnel "show-up" time.
- H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
1. The location of the O&M manuals and procedures for use and preservation; backup copies.
  2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
  3. Typical uses of the O&M manuals.
- I. Product- and System-Specific Training:
1. Review the applicable O&M manuals.
  2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
  3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
  4. Provide hands-on training on all operational modes possible and preventive maintenance.
  5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
  6. Discuss common troubleshooting problems and solutions.
  7. Discuss any peculiarities of equipment installation or operation.
  8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
  9. Review recommended tools and spare parts inventory suggestions of manufacturers.
  10. Review spare parts and tools required to be furnished by Contractor.
  11. Review spare parts suppliers and sources and procurement procedures.
- J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

**END OF SECTION**

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**SECTION 01 91 13**  
**GENERAL COMMISSIONING REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Commissioning is intended to achieve the following specific objectives; this section specifies the Contractor's responsibilities for commissioning:
  - 1. Verify that the work is installed in accordance with the Contract Documents, the manufacturer's recommendations and instructions, and that it receives adequate operational checkout prior to startup: Startup reports are utilized to achieve this.
  - 2. Verify and document that functional performance is in accordance with the Contract Documents: Functional Tests such as manufacturers startup reports, balancing, and site demonstrations executed by the contractor and witnessed by the Commissioning Authority are utilized to achieve this.
  - 3. Verify that operation and maintenance manuals submitted to State of Delaware OMB - Division of Facilities Management are complete: Detailed operation and maintenance (O&M) data submittals by Contractor are utilized to achieve this.
  - 4. Verify that the State of Delaware OMB - Division of Facilities Management's operating personnel are adequately trained: Formal training conducted by Contractor is utilized to achieve this.
- B. The Commissioning Authority is the State of Delaware OMB - Division of Facilities Management

**1.02 SCOPE OF COMMISSIONING**

- A. The following are to be commissioned:
- B. Fire Protection Systems.
- C. Plumbing Systems:
  - 1. Domestic Water
  - 2. Sanitary & Vent
  - 3. Roof Drainage
- D. Other equipment and systems explicitly identified elsewhere in Contract Documents as requiring commissioning.

**1.03 RELATED REQUIREMENTS**

- A. Section 01 70 00 - Execution and Closeout Requirements: General startup requirements.
- B. Section 01 78 00 - Closeout Submittals: Scope and procedures for operation and maintenance manuals and project record documents.
- C. Section 01 79 00 - Demonstration and Training: Scope and procedures for State of Delaware OMB - Division of Facilities Management personnel training.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures, General Requirements:
- B. Make all submittals specified in this section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Authority, unless they require review by DEDC, LLC; in that case, submit to DEDC, LLC first.
- C. Manufacturers' Instructions: Submit copies of all manufacturer-provided instructions that are shipped with the equipment as soon as the equipment is delivered.
- D. Product Data: If submittals to DEDC, LLC do not include the following, submit copies as soon as possible:
- E. Product Data: Submit to DEDC, LLC:
  - 1. Manufacturer's product data, cut sheets, and shop drawings.
  - 2. Manufacturer's installation instructions.
  - 3. Factory test reports.

4. Warranty information, including details of State of Delaware OMB - Division of Facilities Management's responsibilities in regard to keeping warranties in force.
- F. Manufacturers' Instructions: Submit copies of all manufacturer-provided instructions that are shipped with the equipment as soon as the equipment is delivered.
- G. Startup Plans and Reports.

## **PART 2 PRODUCTS**

### **2.01 TEST EQUIPMENT**

- A. Provide all standard testing equipment required to perform startup and initial checkout and required Functional Testing; unless otherwise noted such testing equipment will NOT become the property of State of Delaware OMB - Division of Facilities Management.
- B. Calibration Tolerances: Provide testing equipment of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. If not otherwise noted, the following minimum requirements apply:
  1. Temperature Sensors and Digital Thermometers: Certified calibration within past year to accuracy of 0.5 degree F and resolution of plus/minus 0.1 degree F.
  2. Pressure Sensors: Accuracy of plus/minus 2.0 percent of the value range being measured (not full range of meter), calibrated within the last year.
  3. Calibration: According to the manufacturer's recommended intervals and when dropped or damaged; affix calibration tags or keep certificates readily available for inspection.
- C. Equipment-Specific Tools: Where special testing equipment, tools and instruments are specific to a piece of equipment, are only available from the vendor, and are required in order to accomplish startup or Functional Testing, provide such equipment, tools, and instruments as part of the work at no extra cost to State of Delaware OMB - Division of Facilities Management; such equipment, tools, and instruments are to become the property of State of Delaware OMB - Division of Facilities Management.

## **PART 3 EXECUTION**

### **3.01 STARTUP PLANS AND REPORTS**

- A. Startup Plans: For each item of equipment and system for which the manufacturer provides a startup plan, submit the plan not less than 2 weeks prior to startup.
- B. Startup Reports: For each item of equipment and system for which the manufacturer provides a startup checklist (or startup plan or field checkout sheet), document compliance by submitting the completed startup checklist prior to startup, signed and dated by responsible entity.
- C. Submit directly to the Commissioning Authority and DEDC,LLC.

### **3.02 FUNCTIONAL TESTS**

- A. A Functional Test is required for each item of equipment, system, or other assembly specified to be commissioned, unless sampling of multiple identical or near-identical units is allowed by the final test procedures.
- B. Commissioning Authority is responsible for witnessing results of Functional Tests.
- C. Contractor is responsible for correction of deficiencies and re-testing at no extra cost to State of Delaware OMB - Division of Facilities Management; if a deficiency is not corrected and re-tested immediately, the Commissioning Authority will document the deficiency and the Contractor's stated intentions regarding correction.
  1. Deficiencies are any condition in the installation or function of a component, piece of equipment or system that is not in compliance with Contract Documents or does not perform properly.
  2. When the deficiency has been corrected, the Contractor completes the form certifying that the item is ready to be re-tested and returns the form to the Commissioning Authority; the Commissioning Authority will reschedule the test and the Contractor shall re-test.
  3. Identical or Near-Identical Items: If 10 percent, or three, whichever is greater, of identical or near-identical items fail to perform due to material or manufacturing defect, all items will

be considered defective; provide a proposal for correction within 2 weeks after notification of defect, including provision for testing sample installations prior to replacement of all items.

4. Contractor shall bear the cost of State of Delaware OMB - Division of Facilities Management and Commissioning Authority personnel time witnessing re-testing.
- D. Functional Test Procedures:
1. Some test procedures are included in Contract Documents; where Functional Test procedures are not included in Contract Documents, test procedures will be determined by the Commissioning Authority with input by and coordination with Contractor.
  2. Examples of Functional Testing:
    - a. Test the dynamic function and operation of equipment and systems (rather than just components) using manual (direct observation) or monitoring methods under full operation (e.g., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint).
    - b. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc.
    - c. Systems are run through all the HVAC control system's sequences of operation and components are verified to be responding as the sequence's state.
    - d. Traditional air or water test and balancing (TAB) is not Functional Testing; spot checking of TAB by demonstration to the Commissioning Authority is Functional Testing.
- E. Deferred Functional Tests: Some tests may need to be performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions; performance of these tests remains the Contractor's responsibility regardless of timing.

### 3.03 TEST PROCEDURES - GENERAL

- A. Provide skilled technicians to execute starting of equipment and to execute the Functional Tests. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments and problem-solving.
- B. Provide all necessary materials and system modifications required to produce the flows, pressures, temperatures, and conditions necessary to execute the test according to the specified conditions. At completion of the test, return all affected equipment and systems to their pre-test condition.
- C. Simulating Signals: Disconnect the sensor and use a signal generator to send an amperage, resistance or pressure to the transducer and control system to simulate the sensor value.

### 3.04 OPERATION AND MAINTENANCE MANUALS

- A. See Section 01 78 00 - Closeout Submittals for additional requirements.
- B. Add design intent documentation furnished by DEDC, LLC to manuals prior to submission to State of Delaware OMB - Division of Facilities Management.

**END OF SECTION**

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**SECTION 02 41 19**  
**SELECTIVE DEMOLITION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and store.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

## 1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review structural load limitations of existing structure.
  - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 5. Review areas where existing construction is to remain and requires protection.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. Hazardous materials will be removed by Owner before start of the Work.
  - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.11 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs or video, and templates.
  - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

### 3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. Arrange to shut off utilities with utility companies.
  - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment, when appropriate, reinstall, reconnect, and make equipment operational.

### 3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
  - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  5. Maintain fire watch during and for at least 24 hours after flame-cutting operations.
  6. Maintain adequate ventilation when using cutting torches.
  7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least **3/4 inch (19 mm)** at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- C. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

### 3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

### 3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Remove: As indicated on drawing and in specifications.
- B. Remove and Salvage: As indicated on drawing and in specifications.
- C. Remove and Reinstall: As indicated on drawing and in specifications.
- D. Existing to Remain: As indicated on drawing and in specifications.
- E. Dismantle: As indicated on drawing and in specifications.

END OF SECTION 024119

NOT FOR BIDDING PURPOSES

**SECTION 03 30 53**  
**MISCELLANEOUS CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.

1.4 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.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. Comply with the following sections of **ACI 301 (ACI 301M)** 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."
- B. Comply with **ACI 117 (ACI 117M)**.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.

## 2.3 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- B. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150/C 150M, Type I/II.
- C. Normal-Weight Aggregate: ASTM C 33/C 33M, 3/4-inch (19-mm) nominal maximum aggregate size.
- D. Air-Entraining Admixture: ASTM C 260/C 260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do 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. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- F. Water: ASTM C 94/C 94M.

## 2.4 RELATED MATERIALS

- A. Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils (0.25 mm) thick; or plastic sheet, ASTM E 1745, Class C.
- B. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

## 2.5 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.

## 2.6 CONCRETE MIXTURES

- A. Comply with **ACI 301 (ACI 301M)**.
- B. Normal-Weight Concrete:
  - 1. Minimum Compressive Strength: **3500 psi (24.1 MPa)** at 28 days.
  - 2. Maximum W/C Ratio: 0.50.
  - 3. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
  - 4. Slump Limit: **5 inches (125 mm)**, plus or minus **1 inch (25 mm)**.
  - 5. Air Content: Maintain within range permitted by **ACI 301 (ACI 301M)**. Do not allow air content of trowel-finished floor slabs to exceed 3 percent.

## 2.7 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 (32 deg C)**, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
  - 1. For mixer capacity of **1 cu. yd. (0.76 cu. m)** or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
  - 2. For mixer capacity larger than **1 cu. yd. (0.76 cu. m)**, increase mixing time by 15 seconds for each additional **1 cu. yd. (0.76 cu. m)**.
  - 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

## PART 3 - EXECUTION

### 3.1 FORMWORK INSTALLATION

- A. Design, construct, erect, brace, and maintain formwork according to **ACI 301 (ACI 301M)**.

### 3.2 EMBEDDED ITEM INSTALLATION

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

### 3.3 VAPOR-RETARDER INSTALLATION

- 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 (150 mm)** and seal with manufacturer's recommended adhesive or joint tape.

### 3.4 STEEL REINFORCEMENT INSTALLATION

- 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: 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. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch- (3.2-mm-)** wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with **ACI 301 (ACI 301M)** for placing concrete.

- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of **ACI 301 (ACI 301M)**.
- C. Do not add water to concrete during delivery, at Project site, or during placement.
- D. Consolidate concrete with mechanical vibrating equipment according to **ACI 301 (ACI 301M)**.
- E. Equipment Bases and Foundations:
  - 1. Coordinate sizes and locations of concrete bases with actual equipment provided.
  - 2. Construct concrete bases **4 inches (100 mm)** high unless otherwise indicated; and extend base not less than **6 inches (150 mm)** in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated or unless required for seismic anchor support.
  - 3. Minimum Compressive Strength: **3500 psi (24.1 MPa)** at 28 days.
  - 4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on **18-inch (450-mm)** centers around the full perimeter of concrete base.
  - 5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base, and anchor them into structural concrete substrate.
  - 6. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 7. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections exceeding **1/2 inch (13 mm)**.
  - 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 (3 mm)**.
  - 1. Apply to concrete surfaces exposed to public view.
- C. 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, restraightening, 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. Scratch Finish: Apply scratch finish to surfaces indicated and surfaces to receive concrete floor topping or mortar setting beds for ceramic or quarry tile, portland cement terrazzo, and other bonded cementitious floor finishes unless otherwise indicated.
- D. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.
- E. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.
- F. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- G. Slip-Resistive Broom Finish: Apply a slip-resistive finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

### 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 (ACI 301M)** 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 (1 kg/sq. m 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 (300-mm) 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 (300 mm), 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: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Tests: Perform according to ACI 301 (ACI 301M).
  1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
  2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.

END OF SECTION 033053

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**SECTION 06 10 53**  
**MISCELLANEOUS ROUGH CARPENTRY**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Wood blocking.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal (38 mm actual) size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) or greater size but less than 5 inches nominal (114 mm actual) size in least dimension.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
1. Preservative-treated wood.
2. Power-driven fasteners.
3. Post-installed anchors.

## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal (38-mm actual) thickness or less, 19 percent for more than 2-inch nominal (38-mm actual) thickness unless otherwise indicated.

### 2.2 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
- B. Concealed Boards: 19 percent maximum moisture content of any of the following species and grades:
  - 1. Mixed southern pine or southern pine, No. 3 grade; SPIB.
  - 2. Hem-fir or hem-fir (north), Standard or No. 3 Common grade; NLGA, WCLIB, or WWPA.
  - 3. Spruce-pine-fir (south) or spruce-pine-fir, Standard or No. 3 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
  - 4. Eastern softwoods, No. 3 Common grade; NELMA.
  - 5. Northern species, No. 3 Common grade; NLGA.
  - 6. Western woods, Standard or No. 3 Common grade; WCLIB or WWPA.

- C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

## 2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on [ICC-ES AC01] [ICC-ES AC58] [ICC-ES AC193] [or] [ICC-ES AC308] as appropriate for the substrate.
  - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B633, Class Fe/Zn 5.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Framing Standards: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.
  - F. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
  - G. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
    1. Use inorganic boron for items that are continuously protected from liquid water.
  - H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
  - I. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
    1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
    2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
    3. ICC-ES evaluation report for fastener.
  - J. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.
- 3.2 INSTALLATION OF WOOD BLOCKING AND NAILER
- A. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
  - B. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches (38 mm) wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.
- 3.3 PROTECTION
- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
  - B. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

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**SECTION 07 21 00**  
**THERMAL INSULATION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Glass-fiber blanket insulation.
2. Mineral-wool blanket insulation.

- B. Related Requirements:

1. **Section 092900 "Gypsum Board"** for sound attenuation blanket used as acoustic insulation.

1.3 ACTION SUBMITTALS

- A. Product Data: For the following; for each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

- A. Installer's Certification: Listing type, manufacturer, and R-value of insulation installed in each element of the building thermal envelope.

1. For blown-in or sprayed fiberglass and cellulosic-fiber loose-fill insulation, indicate initial installed thickness, settled thickness, settled R-value, installed density, coverage area, and number of bags installed.
2. Sign, date, and post the certification in a conspicuous location on Project site.

- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

- C. Research Reports: For foam-plastic insulation, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to 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.

## PART 2 - PRODUCTS

### 2.1 GLASS-FIBER BLANKET INSULATION

- A. Glass-Fiber Blanket Insulation, Unfaced: ASTM C665, Type I; passing ASTM E136 for combustion characteristics.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. CertainTeed Corporation.
    - b. Guardian Building Products, Inc.
    - c. Johns Manville.
    - d. Knauf Insulation.
    - e. Owens Corning. (Basis of Design)
  2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
  3. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.

### 2.2 MINERAL-WOOL BLANKET INSULATION

- A. Mineral-Wool Blanket Insulation, Unfaced: ASTM C665, Type I (blankets without membrane facing); consisting of fibers; passing ASTM E136 for combustion characteristics.
1. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)
  2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
  3. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.

### 2.3 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. AGM Industries, Inc.; Series T TACTOO Insul-Hangers.
    - b. Gemco; Spindle Type.
  2. Plate: Perforated, galvanized carbon-steel sheet, **0.030 inch (0.762 mm)** thick by **2 inches (50 mm)** square.
  3. Spindle: Copper-coated, low-carbon steel; fully annealed; **0.105 inch (2.67 mm)** in diameter; length to suit depth of insulation.
- B. Adhesively Attached, Angle-Shaped, Spindle-Type Anchors: Angle welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Gemco; 90-Degree Insulation Hangers.

2. Angle: Formed from 0.030-inch- (0.762-mm-) thick, perforated, galvanized carbon-steel sheet with each leg 2 inches (50 mm) square.
  3. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch (2.67 mm) in diameter; length to suit depth of insulation.
- C. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- (0.41-mm-) thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches (38 mm) square or in diameter.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. AGM Industries, Inc.; RC150.
    - b. Gemco; Dome-Cap.
  2. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in the following locations:
    - a. Ceiling plenums.
    - b. Where indicated
- D. Insulation Standoff: Spacer fabricated from galvanized mild-steel sheet for fitting over spindle of insulation anchor to maintain air space of 1 inch (25 mm) between face of insulation and substrate to which anchor is attached.
1. Products: Subject to compliance with requirements, provide one of the following available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Gemco; Clutch Clip.
- E. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. AGM Industries, Inc.; TACTOO Adhesive.
    - b. Gemco; Tuff Bond Hanger Adhesive.
- 2.4 ACCESSORIES
- A. Insulation for Miscellaneous Voids:
1. Glass-Fiber Insulation: ASTM C764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E84.

## PART 3 - EXECUTION

### 3.1 PREPARATION

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

### 3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Install insulation with manufacturer's R-value label exposed after insulation is installed.
- D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

### 3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
  - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
  - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
  - 3. Maintain **3-inch (76-mm)** clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
  - 4. For metal-framed wall cavities where cavity heights exceed **96 inches (2438 mm)**, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
  - 5. Interior Walls: Set units with facing placed toward areas of high humidity.

### 3.4 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
- B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

**SECTION 07 92 00**  
**JOINT SEALANTS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.1 SUMMARY

- . This Section includes sealants for the following locations:

- 1. Interior joints in vertical surfaces and horizontal nontraffic surfaces as indicated below:
  - b. Tile control and expansion joints.
    - a. Perimeter joints of toilet fixtures.
    - c. Joints between dissimilar materials.
    - d. Joints where acoustical sealant is called for to match existing conditions.
    - e. Other joints as indicated.

- 2. Fire Resistant Sealers

- A. Related Sections include the following:

- 1. Section 092900 "Gypsum Board" for sound attenuation blanket used as acoustic insulation.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.
- B. Provide joint sealants for interior applications that have been produced and installed to establish and maintain airtight continuous seals that are water resistant and cause no staining or deterioration of joint substrates.

1.3 ACTION SUBMITTALS

- A. Product data from manufacturers for each joint sealant product required.
- B. Samples for initial selection purposes in form of manufacturer's standard bead samples, consisting of strips of actual products showing standard range of colors available, for each product exposed to view.

1.4 QUALITY ASSURANCE

- A. **Installer Qualifications:** Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
- B. **Single Source Responsibility for Joint Sealant Materials:** Obtain joint sealant materials from a single manufacturer for each different product required.
- C. **Field-Constructed Mock-Ups:** Prior to installation of joint sealants, apply elastomeric sealants as follows to verify selections made under sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution:
  - 1. Joints in field-constructed mock-ups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants specified in this Section.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

#### 1.6 PROJECT CONDITIONS

- A. **Environmental Limitations:** Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
  - 2. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F (4.4 deg C).
  - 3. When joint substrates are wet.
- B. **Joint-Width Conditions:** Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- C. **Joint-Substrate Conditions:** Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

#### 1.7 SEQUENCING AND SCHEDULING

- A. Sequence installation of joint sealants to occur not less than 21 nor more than 30 days after completion of waterproofing, unless otherwise indicated.

### PART 2 - PRODUCTS

## 2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color of exposed joint sealants to comply with the following:
  - 1. Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated. Color selection must provide equivalent to match adjacent materials.

## 2.2 ELASTOMERIC JOINT SEALANTS (Interior & Exterior Vertical & Horizontal Joints)

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing elastomeric sealants that comply with ASTM C 920 and including those requirements referencing ASTM C920 classifications for Type, Grade, Class and Uses.
- B. Base polymer must be silicone.

## 2.3 LATEX JOINT SEALANTS (Interior Joints in Vertical & Horizontal Surfaces)

- A. General: Provide manufacturer's standard one-part, nonsag, mildew-resistant, paintable latex sealant of formulation indicated that is recommended for exposed applications on interior and protected exterior locations and that accommodates indicated percentage change in joint width existing at time of installation without failing either adhesively or cohesively.
- B. Acrylic-Emulsion Sealant: Provide product complying with ASTM C 834 that accommodates joint movement of not more than 5 percent in both extension and compression for a total of 10 percent.
- C. Silicone Emulsion Sealant: Provide product complying with ASTM C 834 and, except for weight loss measured per ASTM C 792, with ASTM C 920 that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 10 percent.
- D. Available Products: Subject to compliance with requirements, latex joint sealants that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Acrylic-Emulsion Sealant:
    - a. "AC-20", Pecora Corp.
    - b. "Sonolac", Sonneborn Building Products Div., ChemRex, Inc.
    - c. "Tremco Acrylic Latex 834", Tremco, Inc.
  - 2. Silicone-Emulsion Sealant:
    - a. "Trade Mate Paintable Glazing Sealant", Dow Corning Corp.

## 2.4 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following requirements:
  1. Product is effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies per ASTM E 90.
  2. Product has flame spread and smoke developed ratings of less than 25 per ASTM E 84.
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.
- C. Available Products: Subject to compliance with requirements, acoustical joint sealants that may be incorporated in the Work include, but are not limited to, the following:
  1. Acoustical Sealant:
    - a. "SHEETROCK Acoustical Sealant", United States Gypsum Co.
    - b. "AC-20 FTR Acoustical and Insulation Sealant", Pecora Corp.
  2. Acoustical Sealant for Concealed Joints:
    - a. "BA-98", Pecora Corp.
    - b. "Tremco Acoustical Sealant", Tremco, Inc.

## 2.5 TAPE SEALANTS

- A. Tape Sealant: Manufacturer's standard, solvent-free, butyl-based tape sealant with a solids content of 100 percent formulated to be nonstaining, paintable, and nonmigrating in contact with nonporous surfaces with or without reinforcement thread to prevent stretch and packaged on rolls with a release paper on one side.
- B. Available Products: Subject to compliance with requirements, tape sealants that may be incorporated in the Work include, but are not limited to, the following:
  1. "Extra-Seal Tape", Pecora Corp.
  2. "Slim-Seal Tape", Pecora Corp.
  3. "PTI 606", Protective Treatments, Inc.
  4. "Tremco 440 Tape", Tremco, Inc.
  5. "MBT-35", Tremco, Inc.

## 2.6 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: Preformed compressible, resilient, nonstaining, nonwaxing, nonextruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control

sealant depth and otherwise contribute to producing optimum sealant performance:

1. Open-cell polyurethane foam.
  2. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, nonoutgassing in unruptured state.
  3. Proprietary, reticulated, closed-cell polymeric foam, nonoutgassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 gms/cc per ASTM C 1083.
  4. Equivalent to Nomaco's "Sof Rod".
- C. Elastomeric Tubing Joint Fillers: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, capable of remaining resilient at temperatures down to -26 deg F (-32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape 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.

## 2.7 FIRE RESISTANT SEALERS

- A. General: Provide manufacturer's standard fire stopping sealant with accessory materials, having fire-resistant ratings indicated as established, by the testing agency acceptable to authorities having jurisdiction.
1. Fire safing insulation to be used as a sealant back-up is specified in another Division 7 section.
- B. Foamed in Place Fire Stopping Sealant: Two-part, foamed-in-place, silicone sealant formulated for use in a through penetration fire stop system for filling openings around cables, conduit, pipes, and similar penetrations through walls and floors.
- C. Products: Subject to compliance with the requirements, provide one of the following:
1. Dow Corning Fire Stop Foam.
  2. Pensil 851, General Electric.

## 2.8 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

#### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

- C. Latex Sealant Standard: Comply with recommendations of ASTM C90 for use of latex sealants.
- D. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- E. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  2. Do not leave gaps between ends of joint fillers.
  3. Do not stretch, twist, puncture, or tear joint fillers.
  4. Remove absorbent joint fillers that have become wet before sealant application and replace them with dry material.
  5. Install bond-breaker tape between sealants where backer rods are not used between sealants and joint fillers or back of joints.
- F. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
  2. Provide flush joint configuration, per Figure 5B in ASTM C 1193, where indicated.
    - a. Use masking tape to protect adjacent surfaces of recessed tooled joints.
  3. Provide recessed joint configuration, per Figure 5C in ASTM C1193, of recess depth and at locations indicated.
- H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, and to comply with sealant manufacturer's directions for installation methods, materials, and tools that produce seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in conformance with sealant manufacturer's recommendations.

### 3.4 FOAMED IN PLACE FIRE STOPPING SEALANT

- A. Install continuously around piping, conduit, wiring, joists, columns, etc. at penetrations through corridor partitions and fire rated partitions, walls, floors, and ceilings.

- B. Provide fire rating required at penetrations through fire rated partitions, walls, and ceilings. Minimum fire rating shall be equal to the rating of the wall.
- C. Install around irregularly shaped component passing through partitions, walls and ceilings requiring sealants where other sealant types will not adequately fill area.

### 3.5 CLEANING

- A. Clean off excess sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

### 3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

END OF SECTION 079200

NOT FOR BIDDING PURPOSES

**SECTION 09 22 16**  
**NON-STRUCTURAL METAL FRAMING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Non-load-bearing steel framing systems for interior partitions.

1.3 ACTION SUBMITTALS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of code-compliance certification for studs and tracks.
- B. Evaluation Reports: For embossed steel studs and tracks, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association or the Steel Stud Manufacturers Association.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- C. Horizontal Deflection: For wall assemblies, limited to 1/240 of the wall height based on horizontal loading of 5 lbf/sq. ft. (239 Pa).

## 2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
  - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
- B. Studs and Tracks: ASTM C 645. Use either steel studs and tracks or embossed steel studs and tracks.
  - 1. Steel Studs and Tracks:
    - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      - 1) CEMCO; California Expanded Metal Products Co.
      - 2) Custom Stud.
      - 3) MarinoWARE.
      - 4) MBA Building Supplies.
      - 5) MRI Steel Framing, LLC.
      - 6) Phillips Manufacturing Co.
      - 7) Steel Network, Inc. (The).
      - 8) Telling Industries.
    - b. Minimum Base-Metal Thickness: As required by performance requirements for horizontal deflection.
    - c. Depth: As indicated on Drawings.
  - 2. Embossed Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally equivalent to conventional ASTM C 645 steel studs and tracks.
    - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      - 1) CEMCO; California Expanded Metal Products Co.
      - 2) ClarkDietrich Building Systems.
      - 3) MarinoWARE.
      - 4) MBA Building Supplies.
      - 5) Phillips Manufacturing Co.
      - 6) Steel Network, Inc. (The).

- 7) Telling Industries.
  - b. Minimum Base-Metal Thickness: As required by performance requirements for horizontal deflection.
  - c. Depth: As indicated on Drawings.
- C. Slip-Type Head Joints: Where indicated, provide one of the following:
1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 1-1/2-inch (38-mm minimum vertical movement).
    - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      - 1) CEMCO; California Expanded Metal Products Co.
      - 2) ClarkDietrich Building Systems.
      - 3) Fire Trak Corp.
      - 4) MarinoWARE.
      - 5) Steel Network, Inc. (The).
      - 6) Super Stud Building Products Inc.
    2. Single Long-Leg Track System: ASTM C 645 top track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
    3. Double-Track System: ASTM C 645 top outer tracks, inside track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
    4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
      - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
        - 1) Blazeframe Industries.
        - 2) CEMCO; California Expanded Metal Products Co.
        - 3) ClarkDietrich Building Systems.
        - 4) MarinoWARE.
        - 5) MBA Building Supplies.
        - 6) Metal-Lite.
        - 7) Perfect Wall, Inc.
        - 8) Steel Network, Inc. (The).
        - 9) Telling Industries.
- D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
    - a. ClarkDietrich Building Systems.
    - b. MarinoWARE.
    - c. MRI Steel Framing, LLC.
  2. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm).
- E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
    - a. ClarkDietrich Building Systems.
    - b. MarinoWARE.
    - c. MRI Steel Framing, LLC.
  2. Minimum Base-Metal Thickness: 0.0329 inch (0.836 mm).
  3. Depth: 7/8 inch (22.2 mm).
- F. Resilient Furring Channels: 1/2-inch- (13-mm-) deep, steel sheet members designed to reduce sound transmission.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
    - a. ClarkDietrich Building Systems.
    - b. MarinoWARE.
    - c. MRI Steel Framing, LLC.
  2. Configuration: Asymmetrical or hat shaped.
- G. Cold-Rolled Furring Channels: 0.053-inch (1.34-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
1. Depth: 3/4 inch (19 mm).
  2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch (0.8 mm).
  3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
- H. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches (32 mm), wall attachment flange of 7/8 inch (22 mm), minimum uncoated-metal thickness of 0.0179 inch (0.455 mm), and depth required to fit insulation thickness indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
  - a. ClarkDietrich Building Systems.
  - b. MarinoWARE.
  - c. MRI Steel Framing, LLC.

## 2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
  1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
  1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

### 3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
  1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
  2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
  3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
  4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

### 3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
  - 1. Single-Layer Application: 16 inches (406 mm) o.c. unless otherwise indicated.
  - 2. Multilayer Application: 16 inches (406 mm) o.c. unless otherwise indicated.
  - 3. Tile Backing Panels: 16 inches (406 mm) o.c. unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
  - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
  - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
    - a. Install two studs at each jamb unless otherwise indicated.
    - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
    - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
  - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
  - 4. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
  - 5. Curved Partitions:
    - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.

- b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches (150 mm) o.c.

E. Direct Furring:

1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.

F. Z-Shaped Furring Members:

1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches (610 mm) o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches (305 mm) from corner and cut insulation to fit.

- G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 092216

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**SECTION 09 29 00  
GYPSUM BOARD**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Tile backing panels.

B. Related Requirements:

1. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
2. Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Gypsum wallboard.
2. Gypsum board, Type X.
3. Mold-resistant gypsum board.
4. Cementitious backer units.
5. Water-resistant gypsum backing board.
6. Interior trim.
7. Joint treatment materials.
8. Sound-attenuation blankets.

B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

C. Samples for Initial Selection: For each type of trim accessory indicated.

D. Samples for Verification: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

#### 1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or blotchy surface contamination and discoloration.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

#### 2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

#### 2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Georgia-Pacific Building Products.
    - b. National Gypsum Company.
    - c. United States Gypsum Company.

2. Thickness: As indicated.
3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.

B. Gypsum Board, Type X: ASTM C1396/C1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Georgia-Pacific Building Products.
  - b. National Gypsum Company.
  - c. United States Gypsum Company.
2. Thickness: As indicated.
3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.

C. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Georgia-Pacific Building Products.
  - b. National Gypsum Company.
  - c. United States Gypsum Company.
2. Core: 5/8 inch (15.9 mm).
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

## 2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Georgia-Pacific Building Products.
  - b. National Gypsum Company.
  - c. United States Gypsum Company.
2. Thickness: As indicated.
3. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

B. Water-Resistant Gypsum Backing Board: ASTM C1396/C1396M, with manufacturer's standard edges.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Georgia-Pacific Building Products.
  - b. National Gypsum Company.
  - c. United States Gypsum Company.

2. Core: As indicated.

## 2.5 TRIM ACCESSORIES

### A. Interior Trim: ASTM C1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:
  - a. Cornerbead.
  - b. C-Bead: J-shaped; exposed long flange receives joint compound.
  - c. L-Bead: L-shaped; exposed long flange receives joint compound.
  - d. U-Bead: J-shaped; exposed short flange does not receive joint compound.

## 2.6 JOINT TREATMENT MATERIALS

### A. General: Comply with ASTM C475/C475M.

### B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

### C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, 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.
  - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

### D. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.
2. Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

## 2.7 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
  - 1. Use screws complying with ASTM C954 for fastening panels to steel members from **0.033 to 0.112 inch** (0.84 to 2.84 mm) thick.
  - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
  - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- D. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than **1/16 inch** (1.5 mm) of open space between panels. Do not force into place.
- D. 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.

- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
  - 2. Fit gypsum panels around ducts, pipes, and conduits.
  - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC-Rated Assemblies: Seal construction at perimeters, behind control 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 C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

### 3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
  - 1. Wallboard Type: As indicated on Drawings.
  - 2. Type X: As indicated on Drawings.
  - 3. Mold-Resistant Type: As indicated on Drawings.
  - 4. Tile Backing Type: As indicated on Drawings.
- B. Single-Layer Application:
  - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
  - 2. On partitions/walls, apply gypsum panels horizontally (perpendicular 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 panels.

- b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
  3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
  4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Multilayer Application:
1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, **16 inches (400 mm)** minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
  2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
  3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
  4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

### 3.4 INSTALLATION OF TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.11, at locations indicated to receive tile.
- B. Water-Resistant Backing Board: Install where indicated with **1/4-inch (6.4-mm)** gap where panels abut other construction or penetrations.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

### 3.5 INSTALLATION OF TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect
- C. Interior Trim: Install in the following locations:
  1. Cornerbead: Use at outside corners.
  2. LC-Bead: Use at exposed panel edges.
  3. L-Bead: Use where indicated.

4. U-Bead: Use where indicated.

### 3.6 FINISHING GYPSUM BOARD

- 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 surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
  1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  2. Level 2: Panels that are substrate for tile.
  3. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
    - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

### 3.7 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
  1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

**SECTION 09 30 13  
CERAMIC TILING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Ceramic mosaic tile.
2. Glazed wall tile.
3. Tile backing panels.

B. Related Requirements:

1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
2. Section 092900 "Gypsum Board" for water-resistant backer board.

1.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."
- C. Face Size: Actual tile size, excluding spacer lugs.
- D. Module Size: Actual tile size plus joint width indicated.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For tile, grout, and accessories involving color selection.
- D. Samples for Verification:
  - 1. Full-size units of each type and composition of tile and for each color and finish required.

### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For each type of product.
- C. Product Test Reports: For tile-setting and -grouting products.

### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
  - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

### 1.8 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
  - 2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
  - 3. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.

### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

### 1.10 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.
  - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
  - 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
  - 1. Cementitious backer units.

### 2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
  - 1. Provide tile complying with Standard grade requirements.

- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
  - 1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

## 2.3 TILE PRODUCTS

- A. Ceramic Tile Type CT-1, CT-2, CT-3: Glazed wall tile.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Daltile; Ceramic Wall Tile, Classic or a comparable product by one of the following:
    - a. American Olean; a division of Dal-Tile Corporation.
    - b. American Marazzi Tile, Inc.
    - c. Florida Tile, Inc.
    - d. Crossville, Inc.
  - 2. Module Size: 4-1/4 by 4-1/4 inches (108 by 108 mm).
  - 3. Face Size Variation: Rectified.
  - 4. Thickness: 5/16 inch (8 mm).
  - 5. Face: match existing.
  - 6. Finish: match existing glaze.
  - 7. Tile Color and Pattern:
    - a. CT-1: Gloss Almond
    - b. CT-2: Gloss Desert Gray
    - c. CT-3: Gloss Navy
    - d. CTWB-1: Ceramic Wall Base; Gloss Desert Gray
  - 8. Grout Color: No. 15 – Bone.
  - 9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
    - a. Cove Base for Thinset Mortar Installations: Match existing.
    - b. Wainscot Cap for Thinset Mortar Installations: Surface bullnose, module size: match existing.
    - c. External Corners for Thinset Mortar Installations: Surface bullnose, same size as adjoining flat tile.

## 2.4 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 or ASTM C1325, Type A, in maximum lengths available to minimize end-to-end butt joints.
1. Products: Subject to compliance with requirements, provide the following:
    - a. National Gypsum Corporation; PermaBase Cement Board.
    - b. United States Gypsum Company; DUROCK Cement Board.
  2. Thickness: **1/2 inch (12.7 mm)**.

## 2.5 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thinset): ANSI A118.4.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bonsal American, an Oldcastle company.
    - b. Bostik, Inc.
    - c. Custom Building Products.
    - d. Laticrete International, Inc.
    - e. MAPEI Corporation.
    - f. TEC; H.B. Fuller Construction Products Inc.
  2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

## 2.6 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.
- B. Standard Cement Grout: ANSI A118.6.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bonsal American, an Oldcastle company.
    - b. Bostik, Inc.
    - c. Custom Building Products.
    - d. Laticrete International, Inc.
    - e. MAPEI Corporation.
    - f. TEC; H.B. Fuller Construction Products Inc.
  2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to **140 and 212 deg F (60 and 100 deg C)**, respectively, and certified by manufacturer for intended use.

## 2.7 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

## 2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
  - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
  - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

### 3.3 INSTALLATION OF CERAMIC TILE

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
  - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
  - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
  - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
  - 1. Glazed Wall Tile: match existing conditions.
- H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

### 3.4 INSTALLATION OF TILE BACKING PANEL

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use latex-portland cement mortar for bonding material unless otherwise directed in manufacturer's written instructions.

### 3.5 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
  - 1. Remove grout residue from tile as soon as possible.
  - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

### 3.6 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

### 3.7 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Wall Installations, Wood or Metal Studs or Furring:
  - 1. Ceramic Tile Installation: TCNA W244C or TCNA W244F; thinset mortar on cementitious backer units.
    - a. Thinset Mortar: Latex- portland cement mortar.
    - b. Grout: Standard sanded cement grout.
  - 2. Ceramic Tile Installation: TCNA W245 or TCNA W248; thinset mortar on glass-mat, water-resistant gypsum backer board.
    - a. Thinset Mortar: Latex- portland cement mortar.
    - b. Grout: Standard sanded cement grout.

END OF SECTION 093013

**SECTION 09 65 13  
RESILIENT BASE AND ACCESSORIES**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Thermoset-rubber base.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than **12 inches (300 mm)** long.
- C. Samples for Initial Selection: For each type of product indicated.
- D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than **12 inches (300 mm)** long.
- E. Product Schedule: For resilient base and accessory products.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Furnish not less than **10 linear feet (3 linear m)** for every **500 linear feet (150 linear m)** or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than **50 deg F (10 deg C)** or more than **90 deg F (32 deg C)**.

## 1.6 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than **70 deg F (21 deg C)** or more than **95 deg F (35 deg C)**, in spaces to receive resilient products during the following periods:
  - 1. 48 hours before installation.
  - 2. During installation.
  - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than **55 deg F (13 deg C)** or more than **95 deg F (35 deg C)**.
- C. Install resilient products after other finishing operations, including painting, have been completed.

## PART 2 - PRODUCTS

### 2.1 THERMOSET-RUBBER BASE - RB

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
  - 1. Burke Mercer Flooring Products, a division of Burke Industries Inc.
  - 2. Flexco.
  - 3. Johnsonite; a Tarkett company. (Basis-of-Design)
  - 4. Roppe Corporation, USA.
- B. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).
  - 1. Style and Location:
    - a. Style B, Cove: replace in kind, match existing.
- C. Thickness: **0.125 inch (3.2 mm)**.
- D. Height: **4 inches (102 mm)**.
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: Preformed.
- G. Inside Corners: Job formed.
- H. Colors: Match existing.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install resilient products until materials are the same temperature as space where they are to be installed.
  - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- D. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

#### 3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
  - 1. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
    - a. Miter or cope corners to minimize open joints.

### 3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

### 3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
  - 1. Remove adhesive and other blemishes from surfaces.
  - 2. Sweep and vacuum horizontal surfaces thoroughly.
  - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from marks, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

**SECTION 09 091 23  
INTERIOR PAINTING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Primers.
  - 2. Water-based finish coatings.
  - 3. Solvent-based finish coatings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
  - 2. Apply coats on Samples in steps to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint Products: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

## 1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
    - b. Other Items: Architect will designate items or areas required.
  2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
  3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures of less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Benjamin Moore & Co.

2. Dulux (formerly ICI Paints); a brand of AkzoNobel.
3. Duron, Inc.
4. Glidden Professional.
5. PPG Architectural Coatings.
6. Sherwin-Williams Company (The).

- B. Products: Subject to compliance with requirements, provide one of the products listed in the Interior Painting Schedule for the paint category indicated. Products for each category shall be by a single manufacturer, unless otherwise noted.

## 2.2 PAINT PRODUCTS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Colors: Match existing conditions.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Concrete: 12 percent.
  2. Fiber-Cement Board: 12 percent.
  3. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

### 3.3 INSTALLATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:
1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
  2. Testing agency will perform tests for compliance with product requirements.
  3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 INTERIOR PAINTING SCHEDULE

- A. Concrete Substrates, Nontraffic Surfaces:
1. Latex System:
    - a. Prime Coat: Matching topcoat.
    - b. Topcoat: Interior latex paint, match existing.
- B. Gypsum Board Substrates:
1. Institutional Low-Odor/VOC Latex System:
    - a. Prime Coat: Interior, institutional low-odor/VOC primer sealer.
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Interior, latex, institutional low odor/VOC, match existing sheen.

END OF SECTION 099123

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**SECTION 21 05 00**  
**COMMON WORK RESULTS FOR FIRE SUPPRESSION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pipe, fittings, sleeves, escutcheons, seals, and connections for sprinkler and combination sprinkler and standpipe systems.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 09 91 23 - Interior Painting: Preparation and painting of interior fire protection piping systems.
- C. Section 21 13 00 - Fire-Suppression Sprinkler Systems: Sprinkler systems design.

**1.03 REFERENCE STANDARDS**

- A. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.
- B. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2010.
- C. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250; 2011.
- D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- E. ASTM A795/A795M - Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use; 2013.
- F. ASTM C592 - Standard Specification for Mineral Fiber Blanket Insulation and Blanket-Type Pipe Insulation (Metal-Mesh Covered) (Industrial Type); 2013.
- G. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2013a.
- H. FM (AG) - FM Approval Guide; current edition.
- I. FM Approval Guide; current edition.
- J. ITS (DIR) - Directory of Listed Products; current edition.
- K. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- L. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2013.
- M. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers catalogue information. Indicate valve data and ratings.
- C. Shop Drawings: Indicate pipe materials used, jointing methods, supports, floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.
- D. Project Record Documents: Record actual locations of components and tag numbering.
- E. Operation and Maintenance Data: Include installation instructions and spare parts lists.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Conform to FM (AG), UL (DIR), and ITS (DIR) or Warnock Hersey requirements.
- C. Valves: Bear FM (AG), UL (DIR), and ITS (DIR) or Warnock Hersey product listing label or marking. Provide manufacturer's name and pressure rating marked on valve body.

### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store valves in shipping containers, with labeling in place.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

## PART 2 PRODUCTS

### 2.01 FIRE PROTECTION SYSTEMS

- A. Sprinkler Systems: Comply with NFPA 13.
- B. Standpipe and Hose Systems: Comply with NFPA 14.
- C. Welding Materials and Procedures: Comply with ASME BPVC-IX.

### 2.02 ABOVE GROUND PIPING

- A. Steel Pipe: ASTM A53 Schedule 40 or ASTM A795 Schedule 40, black.
  - 1. Cast Iron Fittings: ASME B16.1, flanges and flanged fittings and ASME B16.4, threaded fittings.

### 2.03 PIPE SLEEVES

- A. Vertical Piping:
  - 1. Sleeve Length: 1 inch above finished floor.
  - 2. Provide sealant for watertight joint.
  - 3. Blocked Out Floor Openings: Provide 1-1/2 inch angle set in silicon adhesive around opening.
  - 4. Drilled Penetrations: Provide 1-1/2 inch angle ring or square set in silicone adhesive around penetration.
- B. Clearances:
  - 1. Wall, Floor, Floor, Partitions, and Beam Flanges: 1 inch greater than external; pipe diameter.
  - 2. Rated Openings: Caulked tight with fire stopping material complying with ASTM E814 in accordance with Section 07 84 00 to prevent the spread of fire, smoke, and gases.

### 2.04 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- D. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
- E. Vertical Support: Steel riser clamp.
- F. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and foreign material, from inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### 3.02 INSTALLATION

- A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
- B. Install standpipe piping, hangers, and supports in accordance with NFPA 14.
- C. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.

- D. Install piping to conserve building space, to not interfere with use of space and other work.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- G. Pipe Hangers and Supports:
  - 1. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
  - 2. Place hangers within 12 inches of each horizontal elbow.
  - 3. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
  - 4. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
  - 5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- H. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- I. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
  - 1. Painting of interior fire suppression systems is specified in Section 09 91 23.
- J. Do not penetrate building structural members unless indicated.
- K. Provide sleeves when penetrating footings, floors, walls, and partitions. Seal pipe including sleeve penetrations to achieve fire resistance equivalent to fire separation required.
  - 1. Aboveground Piping:
    - a. Pack solid using mineral fiber complying with ASTM C592.
    - b. Fill space with an elastomer caulk to a depth of 0.50 inch where penetrations occur between conditioned and unconditioned spaces.
  - 2. All Rated Openings: Caulk tight with fire stopping material complying with ASTM E814 in accordance with Section 07 84 00 to prevent the spread of fire, smoke, and gases.
- L. Escutcheons:
  - 1. Install and firmly attach escutcheons at piping penetrations into finished spaces.
  - 2. Provide escutcheons on both sides of partitions separating finished areas through which piping passes.
  - 3. Use chrome plated escutcheons in occupied spaces and to conceal openings in construction.
- M. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

### 3.03 CLEANING

- A. Upon completion of work, clean all parts of the installation.
- B. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

**END OF SECTION**

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**SECTION 21 05 23**

**GENERAL-DUTY VALVES FOR WATER-BASED FIRE-SUPPRESSION PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Two-piece ball valves with indicators.
- B. Bronze butterfly valves with indicators.
- C. Iron butterfly valves with indicators.
- D. Check valves.
- E. Bronze OS&Y gate valves.
- F. Iron OS&Y gate valves.
- G. NRS gate valves.
- H. Trim and drain valves.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 21 05 00 - Common Work Results for Fire Suppression: Pipe and fittings.
- C. Section 21 05 53 - Identification for Fire Suppression Piping and Equipment.
- D. Section 21 12 00 - Fire-Suppression Standpipes.
- E. Section 21 13 00 - Fire-Suppression Sprinkler Systems.

**1.03 REFERENCE STANDARDS**

- A. ASME B1.20.1 - Pipe Threads, General Purpose (Inch); 2013.
- B. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2010.
- C. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.
- D. FM (AG) - FM Approval Guide; current edition.
- E. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- F. UL 262 - Gate Valves for Fire-Protection Service; Current Edition, Including All Revisions.
- G. UL 312 - Check Valves for Fire-Protection Service; Current Edition, Including All Revisions.
- H. UL 789 - Indicator Posts for Fire-Protection Service; Current Edition, Including All Revisions.
- I. UL 1091 - Standard for Butterfly Valves for Fire-Protection Service; Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Conduct a preinstallation meeting 4 weeks prior to the start of the work of this section; require attendance by all affected installers.

**1.05 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on valves including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.

**1.06 QUALITY ASSURANCE**

- A. Welding Materials and Procedures: Comply with ASME BPVC-IX.
- B. Installer and Maintenance Contractor Qualifications:
  - 1. Company specializing in performing the work of this section with minimum five years documented experience.
  - 2. Complies with manufacturer's certification requirements.

### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Prepare valves for shipping as follows:
  - 1. Protect internal parts against rust and corrosion.
  - 2. Protect threads, flange faces, and weld ends.
  - 3. Set valves open to minimize exposure of functional surfaces.
- B. Use the following precautions during storage:
  - 1. Maintain valve end protection and protect flanges and specialties from dirt.
    - a. Provide temporary inlet and outlet caps.
    - b. Maintain caps in place until installation.
  - 2. Store valves in shipping containers and maintain in place until installation.
    - a. Store valves indoors and maintain at higher than ambient dew point temperature.
    - b. If outdoor storage is unavoidable, store valves off the ground in watertight enclosures.
- C. Use the following precautions for handling:
  - 1. Do not use operating handles or stems as lifting or rigging points.

## PART 2 PRODUCTS

### 2.01 GENERAL REQUIREMENTS

- A. FM Global Approved: Provide valves listed in FM (AG) Approval Guide under the following headings:
  - 1. Automated Sprinkler Systems:
    - a. Indicator posts.
    - b. Valves:
      - 1) Gate valves.
      - 2) Single check valves.
      - 3) Miscellaneous valves.
- B. ASME Compliance:
  - 1. ASME B16.1 for flanges on iron valves.
  - 2. ASME B1.20.1 for threads on threaded-end valves.
- C. Comply with NFPA 13 and NFPA 13R for valves.
- D. Valve Pressure Ratings: Not less than minimum pressure rating indicated or higher as required.
- E. Valve Sizes: Same as upstream piping unless otherwise indicated.

### 2.02 TWO-PIECE BALL VALVES WITH INDICATORS

- A. UL 1091, except with ball instead of disc and FM (AG) standard listing for indicating valves (butterfly or ball type), Class Number 1112.
- B. Description:
  - 1. Minimum Pressure Rating: 175 psig.
  - 2. Body Design: Two piece.
  - 3. Body Material: Forged brass or bronze.
  - 4. Port Size: Full or standard.
  - 5. Seat: PTFE.
  - 6. Stem: Bronze or stainless steel.
  - 7. Ball: Chrome-plated brass.
  - 8. Actuator: Worm gear or traveling nut.
  - 9. Supervisory Switch: Internal or external.
  - 10. End Connections for Valves 1 NPS through 2 NPS: Threaded ends.

### 2.03 BRONZE BUTTERFLY VALVES WITH INDICATORS

- A. UL 1091 and FM (AG) standard listing for indicating valves, (butterfly or ball type), Class Number 1112.
- B. Minimum Pressure Rating: 175 psig.
- C. Body Material: Bronze.

- D. Seat: EPDM.
- E. Stem: Bronze or stainless steel.
- F. Disc: Bronze with EPDM coating.
- G. Actuator: Worm gear or traveling nut.
- H. Supervisory Switch: Internal or external.
- I. End Connections for Valves 1 NPS through 2 NPS: Threaded ends.

#### **2.04 IRON BUTTERFLY VALVES WITH INDICATORS**

- A. UL 1091 and FM (AG) standard listing for indicating valves (butterfly or ball type), Class Number 112.
- B. Minimum Pressure Rating: 175 psig.
- C. Body Material: Cast or ductile iron with nylon, EPDM, epoxy, or polyamide coating.
- D. Seat: EPDM.
- E. Stem: Stainless steel.
- F. Disc: Ductile iron, nickel plated.
- G. Actuator: Worm gear or traveling nut.
- H. Supervisory Switch: Internal or external.

#### **2.05 CHECK VALVES**

- A. UL 312 and FM (AG) standard listing for check valves, Class Number 1045.
- B. Minimum Pressure Rating: 175 psig.
- C. Type: Center guided check valve.
- D. Body Material: Cast iron, ductile iron.
- E. Center guided check with elastomeric seal.
- F. Hinge Spring: Stainless steel.
- G. End Connections: Flanged, or threaded.

#### **2.06 BRONZE OS&Y GATE VALVES**

- A. UL 262 and FM (AG) standard listing for fire-service water control valves (OS&Y and NRS-type gate valves).
- B. Minimum Pressure Rating: 175 psig.
- C. Body and Bonnet Material: Bronze or brass.
- D. Wedge: One-piece bronze or brass.
- E. Wedge Seat: Bronze.
- F. Stem: Bronze or brass.
- G. Packing: Non-asbestos PTFE.
- H. Supervisory Switch: External.
- I. End Connections: Threaded.

#### **2.07 IRON OS&Y GATE VALVES**

- A. UL 262 and FM (AG) standard listing for fire-service water control valves (OS&Y and NRS-type gate valves).
- B. Minimum Pressure Rating: 175 psig.
- C. Body and Bonnet Material: Cast or ductile iron.
- D. Wedge: Cast or ductile iron, or bronze with elastomeric coating.
- E. Wedge Seat: Cast or ductile iron, or bronze with elastomeric coating.

- F. Stem: Brass or bronze.
- G. Packing: Non-asbestos PTFE.
- H. Supervisory Switch: External.
- I. End Connections: Flanged.

## 2.08 NRS GATE VALVES

- A. UL 262 and FM (AG) standard listing for fire-service water control valves (OS&Y and NRS-type gate valves).
- B. Minimum Pressure Rating: 175 psig.
- C. Body and Bonnet Material: Cast or ductile iron.
- D. Wedge: Cast or ductile iron with elastomeric coating.
- E. Stem: Brass or bronze.
- F. Packing: Non-asbestos PTFE.
- G. Supervisory Switch: External.
- H. End Connections: Flanged.

## 2.09 TRIM AND DRAIN VALVES

- A. Ball Valves:
  - 1. Description:
    - a. Pressure Rating: 175 psig.
    - b. Body Design: Two piece.
    - c. Body Material: Forged brass or bronze.
    - d. Port Size: Full or standard.
    - e. Seat: PTFE.
    - f. Stem: Bronze or stainless steel.
    - g. Ball: Chrome-plated brass.
    - h. Actuator: Hand-lever.
- B. Globe Valves:
  - 1. Description:
    - a. Pressure Rating: 175 psig.
    - b. Body Material: Bronze with integral seat and screw-in bonnet.
    - c. Ends: Threaded.
    - d. Stem: Bronze.
    - e. Disc Holder and Nut: Bronze.
    - f. Disc Seat: Nitrile.
    - g. Packing: Asbestos free.
    - h. Handwheel: Malleable iron, bronze, or aluminum.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Confirm valve interior to be free of foreign matter and corrosion.
- B. Remove packing materials.
- C. Examine guides and seats by operating valves from the fully open position to the fully closed position.
- D. Examine valve threads and mating pipe for form and cleanliness.
- E. Examine mating flange faces for conditions that might cause leakage.
  - 1. Check bolting for proper size, length, and material.
  - 2. Verify gasket for size, defects, damage, and suitable material composition for service.
  - 3. Replace all defective valves with new valves.

### 3.02 INSTALLATION

- A. Comply with specific valve installation requirements and application in the following Sections:
  - 1. Section 21 12 00 for application of valves in fire-suppression standpipes.
  - 2. Section 21 13 00 for application of valves in wet and dry pipe, fire-suppression sprinkler systems.
- B. Install listed fire protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections.
  - 1. Install permanent identification signs indicating portion of system controlled by each valve.
- C. Valves with threaded connections to have unions at equipment arranged for easy access, service, maintenance, and equipment removal without system shutdown.
- D. Valves in horizontal piping installed with stem at or above the pipe center.
- E. Position valves to allow full stem movement.
- F. Install valve tags. Comply with Section 21 05 53 requirements for valve tags, schedules, and signs on surfaces concealing valves; and the appropriate NFPA standard applying to the piping system in which valves are installed.

**END OF SECTION**

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**SECTION 21 05 53**

**IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nameplates.
- B. Tags.
- C. Pipe markers.
- D. Ceiling tacks.

**1.02 REFERENCE STANDARDS**

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2007.
- B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2013.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturers catalog literature for each product required.
- E. Manufacturer's Installation Instructions: Indicate special procedures, and installation instructions.
- F. Project Record Documents: Record actual locations of tagged valves.

**PART 2 PRODUCTS**

**2.01 IDENTIFICATION APPLICATIONS**

- A. Automatic Controls: Tags.
- B. Instrumentation: Tags.
- C. Major Control Components: Nameplates.
- D. Piping: Tags.
- E. Valves: Nameplates and ceiling tacks where above lay-in ceilings.

**2.02 NAMEPLATES**

- A. Description: Laminated three-layer plastic with engraved letters.
  - 1. Letter Color: White.
  - 2. Letter Height: 1/4 inch.
  - 3. Background Color: Black.
  - 4. Thickness: 1/8 inch.
  - 5. Plastic: Comply with ASTM D709.

**2.03 TAGS**

- A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.
- B. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

**2.04 PIPE MARKERS**

- A. Color: Comply with ASME A13.1.
- B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- C. Color code as follows:

1. Fire Quenching Fluids: Red with white letters.

## **2.05 CEILING TACKS**

- A. Description: Steel with 3/4 inch diameter color coded head.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.

### **3.02 INSTALLATION**

- A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Use tags on piping 3/4 inch diameter and smaller.
  1. Identify service, flow direction, and pressure.
  2. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.
- E. Locate ceiling tacks to locate valves above T-bar type panel ceilings. Locate in corner of panel closest to equipment.

**END OF SECTION**

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**SECTION 21 12 00**  
**FIRE-SUPPRESSION STANDPIPES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Valves.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- B. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.
- C. Section 21 05 00 - Common Work Results for Fire Suppression: Fire protection piping.
- D. Section 21 05 23 - General-Duty Valves for Water-Based Fire-Suppression Piping.

**1.03 REFERENCE STANDARDS**

- A. FM (AG) - FM Approval Guide; current edition.
- B. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2013.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate supports, components, accessories, and sizes.
  - 1. Submit shop drawings and product data to State of Delaware OMB - Division of Facilities Management's insurance underwriter for approval.
- C. Project Record Documents: Record actual locations of components.
- D. Operation Data: Include appropriate manufacturer's data.
- E. Maintenance Data: Include servicing requirements and test schedule.
- F. Certificates: Provide certificate of compliance from authority having jurisdiction indicating approval of field acceptance tests.

**1.05 QUALITY ASSURANCE**

- A. Perform Work in accordance with NFPA 14. Maintain one copy on site.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

**1.06 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 VALVES**

- A. General Duty Valves: Refer to Section 21 05 23.
- B. Specialty Valves:
  - 1. Hose Connection Valve:
    - a. Angle type; brass finish; 2-1/2 NPS, thread to match fire department hardware, 300 psi working pressure, with threaded cap and chain of same material and finish.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 14.

**3.02 FIELD QUALITY CONTROL**

- A. Test entire system in accordance with NFPA 14.

B. Test shall be witnessed by Fire Marshal.

**END OF SECTION**

NOT FOR BIDDING PURPOSES

**SECTION 21 13 00**  
**FIRE-SUPPRESSION SPRINKLER SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wet-pipe sprinkler system.
- B. System design, installation, and certification.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 21 05 00 - Common Work Results for Fire Suppression: Pipe and fittings.
- C. Section 21 05 23 - General-Duty Valves for Water-Based Fire-Suppression Piping.
- D. Section 21 05 53 - Identification for Fire Suppression Piping and Equipment.

**1.03 REFERENCE STANDARDS**

- A. FM (AG) - FM Approval Guide; current edition.
- B. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2012.
- C. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements; 2012.
- D. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2013.
- E. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2013.
- F. NFPA 13 - Standard for the Installation of Sprinkler Systems; 2016.
- G. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene 4 weeks before starting work of this section.

**1.05 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
- C. Shop Drawings:
  - 1. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.
  - 2. Submit shop drawings to Authorities Having Jurisdiction for approval. Submit proof of approval to DEDC, LLC.
- D. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.
- E. Designer's Qualification Statement.

**1.06 QUALITY ASSURANCE**

- A. Comply with FM (AG) requirements.
- B. Designer Qualifications: Design system under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Delaware.
- C. Installer Qualifications: Company specializing in performing the work of this section with five (5) years documented experience.
- D. Equipment and Components: Provide products that bear FM (AG) label or marking.
- E. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Sprinklers, Valves, and Equipment:
  - 1. Tyco Fire Protection Products: [www.tyco-fire.com/#sle](http://www.tyco-fire.com/#sle).
  - 2. Viking Corporation: [www.vikinggroupinc.com/#sle](http://www.vikinggroupinc.com/#sle).
  - 3. Substitutions: See Section 01 60 00 - Product Requirements.

### 2.02 SPRINKLER SYSTEM

- A. Sprinkler System: Provide coverage for building areas noted.
- B. Occupancy: Light hazard; comply with NFPA 13.
- C. Water Supply: Determine volume and pressure from water flow test data.
- D. Interface system with building fire and smoke alarm system.
- E. Provide fire department connections where indicated.
- F. Pipe Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
  - 1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
  - 2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
  - 3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
  - 4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.
  - 5. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.

### 2.03 PIPING SPECIALTIES

- A. Wet Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber faced clapper to automatically actuate water motor alarm, pressure retard chamber and variable pressure trim with the following additional capabilities and features:
  - 1. Activate electric alarm.
  - 2. Test and drain valve.
  - 3. Replaceable internal components without removing valve from installed position.
- B. Water Flow Switch: Vane type switch for mounting horizontal or vertical, with two contacts; rated 10 amp at 125 volt AC and 2.5 amp at 24 volt DC.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install in accordance with referenced NFPA design and installation standard.
- B. Install equipment in accordance with manufacturer's instructions.
- C. Place pipe runs to minimize obstruction to other work.
- D. Place piping in concealed spaces above finished ceilings.
- E. Hydrostatically test entire system.
- F. Require test be witnessed by Fire Marshal.

**END OF SECTION**

**SECTION 22 05 16**

**EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Flexible pipe connectors.
- B. Expansion joints and compensators.
- C. Pipe loops, offsets, and swing joints.

**1.02 RELATED REQUIREMENTS**

- A. Section 21 05 00 - Common Work Results for Fire Suppression.
- B. Section 22 10 05 - Plumbing Piping.

**1.03 REFERENCE STANDARDS**

- A. ASME B16.5 - Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard; 2013.
- B. ASME B16.11 - Forged Fittings, Socket-welding and Threaded; 2011.
- C. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data:
  - 1. Flexible Pipe Connectors: Indicate maximum temperature and pressure rating, face-to-face length, live length, hose wall thickness, hose convolutions per foot and per assembly, fundamental frequency of assembly, braid structure, and total number of wires in braid.
  - 2. Expansion Joints: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
- C. Manufacturer's Instructions: Indicate manufacturer's installation instructions, special procedures, and external controls.
- D. Maintenance Data: Include adjustment instructions.
- E. Project Record Documents: Record installed locations of flexible pipe connectors, expansion joints, anchors, and guides.
- F. Maintenance Materials: Furnish the following for State of Delaware OMB - Division of Facilities Management's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.

**PART 2 PRODUCTS**

**2.01 REGULATORY REQUIREMENTS**

- A. Comply with UL (DIR) requirements.

**2.02 FLEXIBLE PIPE CONNECTORS - STEEL PIPING**

- A. Manufacturers:
  - 1. Mercer Rubber Company: [www.mercer-rubber.com/#sle](http://www.mercer-rubber.com/#sle).
  - 2. The Metraflex Company: [www.metraflex.com/#sle](http://www.metraflex.com/#sle).
  - 3. Substitutions: See Section 01 60 00 - Product Requirements.

**2.03 FLEXIBLE PIPE CONNECTORS - COPPER PIPING**

- A. Manufacturers:
  - 1. Mercer Rubber Company: [www.mercer-rubber.com/#sle](http://www.mercer-rubber.com/#sle).
  - 2. The Metraflex Company: [www.metraflex.com/#sle](http://www.metraflex.com/#sle).
  - 3. Substitutions: See Section 01 60 00 - Product Requirements.

#### 2.04 EXPANSION JOINTS - HOSE AND BRAID

- A. Manufacturers:
  - 1. The Metraflex Company; Metraloop: [www.metroflex.com/#sle](http://www.metroflex.com/#sle).
  - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Flexible Connectors: Flanged, braided type with wetted components of stainless steel, sized to match piping.
  - 1. Maximum Allowable Working Pressure: 150 psig at 120 degrees F.
  - 2. End Connections: Same as specified for pipe jointing.
  - 3. Provide necessary accessories including, but not limited to, swivel joints and limit stops.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Anchor pipe to building structure as indicated in specifications. Provide pipe guides so movement is directed along axis of pipe only. Erect piping such that strain and weight is not on cast connections or apparatus.
- C. Provide support and equipment required to control expansion and contraction of piping. Provide loops, pipe offsets, and swing joints, or expansion joints where required.

**END OF SECTION**

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**SECTION 22 05 17**  
**SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pipe sleeves.
- B. Manufactured sleeve-seal systems.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 22 05 53 - Identification for Plumbing Piping and Equipment: Piping identification.
- C. Section 22 07 19 - Plumbing Piping Insulation.

**1.03 REFERENCE STANDARDS**

- A. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2013a.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate pipe materials used, jointing methods, supports, floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.
- C. Maintenance Materials: Furnish the following for State of Delaware OMB - Division of Facilities Management's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store sleeve and sleeve seals in shipping containers, with labeling in place.
- B. Provide temporary protective coating on cast iron and steel sleeves if shipped loose.

**1.07 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

**PART 2 PRODUCTS**

**2.01 PIPE SLEEVES**

- A. Manufacturers:
  - 1. Flexicraft Industries; Pipe Wall Sleeve: [www.flexicraft.com/#sle](http://www.flexicraft.com/#sle).
  - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Vertical Piping:
  - 1. Sleeve Length: 1 inch above finished floor.
  - 2. Provide sealant for watertight joint.
  - 3. Blocked Out Floor Openings: Provide 1-1/2 inch angle set in silicon adhesive around opening.
  - 4. Drilled Penetrations: Provide 1-1/2 inch angle ring or square set in silicone adhesive around penetration.
- C. Plastic or Sheet Metal: Pipe passing through interior walls, partitions, and floors, unless steel or brass sleeves are specified below.

- D. Clearances:
1. Provide allowance for insulated piping.
  2. Wall, Floor, Floor, and Partitions: 1 inch greater than external; pipe diameter.
  3. All Rated Openings: Caulked tight with fire stopping material complying with ASTM E814 in accordance with Section 07 84 00 to prevent the spread of fire, smoke, and gases.

## 2.02 MANUFACTURED SLEEVE-SEAL SYSTEMS

- A. Manufacturers:
1. Advance Products & Systems, LLC; Innerlynx: [www.apsonline.com/#sle](http://www.apsonline.com/#sle).
  2. Flexicraft Industries; PipeSeal: [www.flexicraft.com/#sle](http://www.flexicraft.com/#sle).
- B. Modular/Mechanical Seal:
1. Synthetic rubber interlocking links continuously fill annular space between pipe and wall/casing opening.
  2. Provide watertight seal between pipe and wall/casing opening.
  3. Elastomer element size and material in accordance with manufacturer's recommendations.
  4. Glass reinforced plastic pressure end plates.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and foreign material, from inside and outside, before assembly.

### 3.02 INSTALLATION

- A. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- B. Install piping to conserve building space, to not interfere with use of space and other work.
- C. Install piping and pipe sleeves to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- D. Provide sleeves when penetrating floors and fire rated assemblies. Seal pipe including sleeve penetrations to achieve fire resistance equivalent to fire separation required.
1. Aboveground Piping:
    - a. Pack solid using mineral fiber complying with ASTM C592.
    - b. Fill space with an elastomer caulk to a depth of 0.50 inch where penetrations occur between conditioned and unconditioned spaces.
  2. All Rated Openings: Caulk tight with fire stopping material complying with ASTM E814 in accordance with Section 07 84 00 to prevent the spread of fire, smoke, and gases.
- E. Manufactured Sleeve-Seal Systems:
1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.
  2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
  3. Locate piping in center of sleeve or penetration.
  4. Install field assembled sleeve-seal system components in annular space between sleeve and piping.
  5. Tighten bolting for a water-tight seal.
  6. Install in accordance with manufacturer's recommendations.
- F. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

### 3.03 CLEANING

- A. Upon completion of work, clean all parts of the installation.

- B. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.
- C. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

**END OF SECTION**

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**SECTION 22 05 53**  
**IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nameplates.
- B. Tags.
- C. Pipe markers.
- D. Ceiling tacks.

**1.02 REFERENCE STANDARDS**

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2007.
- B. ASME A13.1 - Scheme for the Identification of Piping Systems; The American Society of Mechanical Engineers; 2007 (ANSI/ASME A13.1).

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturers catalog literature for each product required.
- E. Manufacturer's Installation Instructions: Indicate special procedures, and installation.
- F. Project Record Documents: Record actual locations of tagged valves.

**PART 2 PRODUCTS**

**2.01 IDENTIFICATION APPLICATIONS**

- A. Piping: Tags.
- B. Valves: Tags and ceiling tacks where located above lay-in ceiling.

**2.02 NAMEPLATES**

- A. Description: Laminated three-layer plastic with engraved letters.
  - 1. Letter Color: White.
  - 2. Letter Height: 1/4 inch.
  - 3. Background Color: Black.

**2.03 TAGS**

- A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch diameter.
- B. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

**2.04 PIPE MARKERS**

- A. Comply with ASME A13.1.
- B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- C. Color code as follows:
  - 1. Potable, Cooling, Boiler, Feed, Other Water: Green with white letters.
  - 2. Fire Quenching Fluids: Red with white letters.

**2.05 CEILING TACKS**

- A. Description: Steel with 3/4 inch diameter color coded head.

- B. Color code as follows:
  - 1. Plumbing Valves: Green.

### **PART 3 EXECUTION**

#### **3.01 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.

#### **3.02 INSTALLATION**

- A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- E. Use tags on piping 3/4 inch diameter and smaller.
  - 1. Identify service, flow direction, and pressure.
  - 2. Install in clear view and align with axis of piping.
  - 3. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.
- F. Locate ceiling tacks to locate valves above lay-in panel ceilings. Locate in corner of panel closest to equipment.

#### **3.03 SCHEDULES**

- A. Domestic Water: Green Background with White Lettering

**END OF SECTION**

NOT FOR BIDDING PURPOSES

**SECTION 22 07 19**  
**PLUMBING PIPING INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Piping insulation.
- B. Flexible removable and reusable blanket insulation.
- C. Jackets and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 22 10 05 - Plumbing Piping: Placement of hangers and hanger inserts.

**1.03 REFERENCE STANDARDS**

- A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.
- B. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2015.
- C. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2013).
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- F. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

**1.07 FIELD CONDITIONS**

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

**PART 2 PRODUCTS**

**2.01 REGULATORY REQUIREMENTS**

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

**2.02 GLASS FIBER**

- A. Manufacturers:
  - 1. Knauf Insulation: [www.knaufusa.com](http://www.knaufusa.com).
  - 2. Owens Corning Corp: [www.owenscorning.com](http://www.owenscorning.com).

3. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
  1. K Value: ASTM C177, 0.24 at 75 degrees F.
  2. Maximum Service Temperature: 850 degrees F.
  3. Maximum Moisture Absorption: 0.2 percent by volume.
- C. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
  1. K Value: ASTM C177, 0.24 at 75 degrees F.
  2. Maximum Service Temperature: 650 degrees F.
  3. Maximum Moisture Absorption: 0.2 percent by volume.
- D. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.

### 2.03 JACKETS

- A. PVC Plastic.
  1. Manufacturers:
    - a. Johns Manville Corporation: [www.jm.com/#sle](http://www.jm.com/#sle).
    - b. Substitutions: See Section 01 60 00 - Product Requirements.
  2. Jacket: One piece molded type fitting covers and sheet material, off-white color.
    - a. Minimum Service Temperature: 0 degrees F.
    - b. Maximum Service Temperature: 150 degrees F.
    - c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
    - d. Thickness: 10 mil.
    - e. Connections: Brush on welding adhesive.
- B. Canvas Jacket: UL listed 6 oz/sq yd plain weave cotton fabric treated with dilute fire retardant lagging adhesive.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

### 3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Exposed Piping: Locate insulation and cover seams in least visible locations.
- C. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
- D. Glass fiber insulated pipes conveying fluids below ambient temperature:
  1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
  2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- E. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.
- F. Glass fiber insulated pipes conveying fluids above ambient temperature:
  1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.

2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
- G. Inserts and Shields:
  1. Application: Piping 1-1/2 inches diameter or larger.
  2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
  3. Insert Location: Between support shield and piping and under the finish jacket.
  4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
  5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
- H. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 07 84 00.
- I. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces (less than 10 feet above finished floor): Finish with canvas jacket sized for finish painting.

### 3.03 SCHEDULES

- A. Plumbing Systems:
  1. Domestic Hot Water Supply:
    - a. Glass Fiber Insulation: 1-1/2" and smaller shall be 1" thick.
    - b. Glass Fiber Insulation: 2" and larger shall be 1-1/2" thick.
  2. Domestic Hot Water Recirculation:
    - a. Glass Fiber Insulation: 1-1/2" and smaller shall be 1" thick.
    - b. Glass Fiber Insulation: 2" and larger shall be 1-1/2" thick.
  3. Domestic Cold Water:
    - a. Glass Fiber Insulation: Less than 1-1/2" shall be 1/2" thick.
    - b. Glass Fiber Insulation: 1-1/2" and larger shall be 1" thick.
  4. Roof Drainage Above Grade: 1" Thick down to floor
  5. Plumbing Vents Within 10 Feet of the Exterior: 1-1/2" Thick

**END OF SECTION**

**NOT FOR BIDDING PURPOSES**

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**SECTION 22 10 05**  
**PLUMBING PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pipe, pipe fittings, specialties, and connections for piping systems.
  - 1. Sanitary sewer.
  - 2. Domestic water.
  - 3. Storm water.
  - 4. Flanges, unions, and couplings.
  - 5. Pipe hangers and supports.
  - 6. Valves.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping.
- B. Section 22 05 16 - Expansion Fittings and Loops for Plumbing Piping.
- C. Section 22 05 53 - Identification for Plumbing Piping and Equipment.
- D. Section 22 07 19 - Plumbing Piping Insulation.

**1.03 REFERENCE STANDARDS**

- A. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- B. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; 2013.
- C. ASME B31.9 - Building Services Piping; 2014.
- D. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.
- E. ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems; 2009.
- F. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings; 2015.
- G. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).
- H. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2014.
- I. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2013.
- J. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2010.
- K. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2002 (Reapproved 2010).
- L. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2014.
- M. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers; 1992 (Reapproved 2008).
- N. AWWA C550 - Protective Interior Coatings for Valves and Hydrants; 2013.
- O. AWWA C651 - Disinfecting Water Mains; 2005.
- P. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2012.
- Q. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements; 2012.
- R. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2013.
- S. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2013.

- T. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.
- U. MSS SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends; 2011.
- V. MSS SP-85 - Cast Iron Globe & Angle Valves, Flanged and Threaded Ends; 2011.
- W. NSF 61 - Drinking Water System Components - Health Effects; 2014 (Errata 2015).
- X. NSF 372 - Drinking Water System Components - Lead Content; 2011.

#### **1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Welder Certificate: Include welders certification of compliance with ASME BPVC-IX.
- D. Sustainable Design Documentation: For soldered copper joints, submit installer's certification that the specified installation method and materials were used.
- E. Project Record Documents: Record actual locations of valves.
- F. Maintenance Materials: Furnish the following for State of Delaware OMB - Division of Facilities Management's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
  - 2. Valve Repacking Kits: One for each type and size of valve.

#### **1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.
- D. Welder Qualifications: Certified in accordance with ASME BPVC-IX.
- E. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

#### **1.06 REGULATORY REQUIREMENTS**

- A. Perform Work in accordance with the authority having jurisdiction plumbing code.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

#### **1.08 FIELD CONDITIONS**

- A. Do not install underground piping when bedding is wet or frozen.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL REQUIREMENTS**

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI) and be listed by NSF International.

## 2.02 SANITARY SEWER PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A74, service weight.
  - 1. Fittings: Cast iron.
  - 2. Joint Seals: ASTM C564 neoprene gaskets.

## 2.03 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Tube(Domestic Water 2" and below): ASTM B88 (ASTM B88M), Type K (A), Drawn (H).
  - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
  - 2. Joints: ASTM B32, alloy Sn95 solder.
  - 3. Mechanical Press Sealed Fittings: Double pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, non toxic synthetic rubber sealing elements.

## 2.04 STORM WATER PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A74 service weight.
  - 1. Fittings: Cast iron.
  - 2. Joint Seals: ASTM C564 neoprene gaskets.

## 2.05 FLANGES, AND UNIONS

- A. Unions for Pipe Sizes 3 Inches and Under:
  - 1. Ferrous pipe: Class 150 malleable iron threaded unions.
  - 2. Copper tube and pipe: Class 150 bronze unions with soldered joints.
- B. Flanges for Pipe Size Over 1 Inch:
  - 1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
  - 2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
- C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

## 2.06 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
  - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
  - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
  - 3. Trapeze Hangers: Welded steel channel frames attached to structure.
  - 4. Vertical Pipe Support: Steel riser clamp.
  - 5. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.
- B. Plumbing Piping - Drain, Waste, and Vent:
  - 1. Conform to ASME B31.9.
  - 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
  - 3. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
  - 4. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
  - 5. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
  - 6. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp.
  - 7. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
  - 8. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- C. Plumbing Piping - Water:
  - 1. Conform to ASME B31.9.
  - 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.

3. Hangers for Cold Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
  4. Hangers for Hot Pipe Sizes 2 Inches to 4 Inches: Carbon steel, adjustable, clevis.
  5. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- D. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
  2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
  3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
  4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.
  5. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.
  6. Manufacturers:
    - a. Powers Fasteners, Inc.: [www.powers.com](http://www.powers.com).
    - b. Substitutions: See Section 01 60 00 - Product Requirements.

## 2.07 GATE VALVES

- A. Manufacturers:
1. Tyco Flow Control: [www.tycoflowcontrol.com](http://www.tycoflowcontrol.com).
  2. Conbraco Industries, Inc: [www.apollovalves.com](http://www.apollovalves.com).
  3. Nibco, Inc: [www.nibco.com](http://www.nibco.com).
  4. Milwaukee Valve Company: [www.milwaukeevalve.com](http://www.milwaukeevalve.com).
  5. Substitutions: See Section 01 60 00 - Product Requirements.
- B. 2 Inches and Larger:
1. 1, Class 125, iron body, bronze trim, outside screw and yoke, handwheel, solid wedge disc, flanged ends. Provide chain-wheel operators for valves 6 inches and larger mounted over 8 feet above floor.

## 2.08 BALL VALVES

- A. Manufacturers:
1. Tyco Flow Control: [www.tycoflowcontrol.com](http://www.tycoflowcontrol.com).
  2. Conbraco Industries, Inc: [www.apollovalves.com](http://www.apollovalves.com).
  3. Nibco, Inc: [www.nibco.com](http://www.nibco.com).
  4. Milwaukee Valve Company: [www.milwaukeevalve.com](http://www.milwaukeevalve.com).
  5. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze, two piece body, chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, solder ends with union.

## 2.09 WATER PRESSURE REDUCING VALVES

- A. Manufacturers:
1. Amtrol Inc: [www.amtrol.com/#sle](http://www.amtrol.com/#sle).
  2. Apollo Valves: [www.apollovalves.com/#sle](http://www.apollovalves.com/#sle).
  3. Watts Regulator Company: [www.wattsregulator.com/#sle](http://www.wattsregulator.com/#sle).
  4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Up to 2 Inches:
1. ASSE 1003, bronze body, stainless steel, and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded single union ends.
- C. Over 2 Inches:
1. ASSE 1003, cast iron body with interior lining complying with AWWA C550, bronze fitted, elastomeric diaphragm and seat disc, flanged.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

### 3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### 3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Vent piping within a plenum rated ceiling must meet the code required smoke and flame spread ratings. If the material specified to be used does not meet the 25/50 smoke / flame spread rating it will be the installing contractors responsibility to insulate the portion of this piping within the plenum.
- C. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- D. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- E. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- F. Group piping whenever practical at common elevations.
- G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 05 16.
- H. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- I. Provide access where valves and fittings are not exposed.
- J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- K. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- L. Sleeve pipes passing through partitions, walls and floors.
- M. Inserts:
  - 1. Provide inserts for placement in concrete formwork.
  - 2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
  - 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
  - 4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
  - 5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
- N. Pipe Hangers and Supports:
  - 1. Install in accordance with ASME B31.9.
  - 2. Support horizontal piping as indicated.
  - 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
  - 4. Place hangers within 12 inches of each horizontal elbow.
  - 5. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
  - 6. Provide copper plated hangers and supports for copper piping.

### 3.04 APPLICATION

- A. Install ball valves in domestic water systems.
- B. Install gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Install globe valves for throttling, bypass, or manual flow control services.

- D. Provide plug valves in propane and natural gas systems for shut-off service.

### 3.05 TOLERANCES

- A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope.
- B. Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

### 3.06 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.
- F. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

### 3.07 SCHEDULES

- A. Pipe Hanger Spacing:
  - 1. Metal Piping:
    - a. Pipe Size: 1/2 inches to 1-1/4 inches:
      - 1) Maximum Hanger Spacing: 6.5 ft.
      - 2) Hanger Rod Diameter: 3/8 inches.
    - b. Pipe Size: 1-1/2 inches to 2 inches:
      - 1) Maximum Hanger Spacing: 10 ft.
      - 2) Hanger Rod Diameter: 3/8 inch.
    - c. Pipe Size: 2-1/2 inches to 3 inches:
      - 1) Maximum Hanger Spacing: 10 ft.
      - 2) Hanger Rod Diameter: 1/2 inch.
    - d. Pipe Size: 4 inches to 6 inches:
      - 1) Maximum Hanger Spacing: 10 ft.
      - 2) Hanger Rod Diameter: 5/8 inch.

**END OF SECTION**

**SECTION 28 46 00**  
**FIRE DETECTION AND ALARM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Replacement and removal of existing fire alarm system components, wiring, and conduit indicated.
- B. Modification and/or expansion of existing fire alarm system as indicated.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 84 00 - Firestopping: Materials and methods for work to be performed by this installer.

**1.03 REFERENCE STANDARDS**

- A. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Cor 1, 2012).
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 72 - National Fire Alarm and Signaling Code; 2016.
- D. NFPA 101 - Life Safety Code; 2015.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Evidence of designer qualifications.
- C. Design Documents: Submit all information required for plan review and permitting to the Office of the State Fire Marshal, including but not limited to floor plans, riser diagrams, and description of operation:
  - 1. Copy (if any) of list of data required by authority having jurisdiction.
  - 2. NFPA 72 "Record of Completion", filled out to the extent known at the time.
  - 3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7.5.2.2(9), and complete listing of software required.
  - 4. System zone boundaries and interfaces to fire safety systems.
  - 5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
  - 6. Circuit layouts, number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
  - 7. List of all devices on each signaling line circuit, with spare capacity indicated.
  - 8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
  - 9. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
  - 10. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
  - 11. Certification by the manufacturer of the control unit that the system design complies with Contract Documents.
  - 12. Certification by Contractor that the system design complies with Contract Documents.
- D. Evidence of installer qualifications.
- E. Evidence of instructor qualifications; training lesson plan outline.
- F. Evidence of maintenance contractor qualifications, if different from installer.
- G. Inspection and Test Reports:
  - 1. Submit inspection and test plan prior to closeout demonstration.

2. Submit documentation of satisfactory inspections and tests.
  3. Submit NFPA 72 "Inspection and Test Form," filled out.
- H. Operating and Maintenance Data: See Section 01 78 00 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:
1. Complete set of specified design documents, as approved by authority having jurisdiction.
  2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
  3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
  4. List of recommended spare parts, tools, and instruments for testing.
  5. Replacement parts list with current prices, and source of supply.
  6. Detailed troubleshooting guide and large scale input/output matrix.
  7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to State of Delaware OMB - Division of Facilities Management.
  8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.
- I. Project Record Documents: See Section 01 78 00 for additional requirements; have one set available during closeout demonstration:
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
  2. "As installed" wiring and schematic diagrams, with final terminal identifications.
  3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.
- J. Closeout Documents:
1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
  2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.
  3. Maintenance contract.
- K. Maintenance Materials, Tools, and Software: Furnish the following for State of Delaware OMB - Division of Facilities Management's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.
  2. Furnish spare parts of same manufacturer and model as those installed; deliver in original packaging, labeled in same manner as in operating and maintenance data and place in spare parts cabinet.
  3. In addition to the items in quantities indicated in PART 2, furnish the following:
    - a. All tools, software, and documentation necessary to modify the fire alarm system using State of Delaware OMB - Division of Facilities Management's personnel; minimum modification capability to include addition and deletion of devices, circuits, and zones, and changes to system description, operation, and evacuation and instructional messages.
    - b. One copy, on CD-ROM, of all software not resident in read-only-memory.

#### 1.05 QUALITY ASSURANCE

- A. Designer Qualifications: NICET Level III or IV (3 or 4) certified fire alarm technician or registered fire protection engineer, employed by fire alarm control panel manufacturer, Contractor, or installer, with experience designing fire alarm systems in the jurisdictional area of the authorities having jurisdiction.
- B. Installer Qualifications: Firm with minimum 5 documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.

1. Authorized representative of control unit manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making certification.
  2. Installer Personnel: At least 2 years of experience installing fire alarm systems.
  3. Supervisor: NICET level III or IV (3 or 4) certified fire alarm technician; furnish name and address.
  4. Contract maintenance office located within 50 miles of project site.
  5. Certified in Delaware as fire alarm installer.
- C. Maintenance Contractor Qualifications: Same entity as installer or different entity with specified qualifications.
- D. Instructor Qualifications: Experienced in technical instruction, understanding fire alarm theory, and able to provide the required training; trained by fire alarm control unit manufacturer.
- E. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.06 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide control panel manufacturer's warranty that system components other than wire and conduit are free from defects and will remain so for 5 years after date of Substantial Completion.
- C. Provide installer's warranty that the installation is free from defects and will remain so for 2 years after date of Substantial Completion.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Initiating Devices and Notification Appliances:
1. Same manufacturer as control units.
- B. Substitutions: See Section 01 60 00 - Product Requirements.
1. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

#### **2.02 FIRE SAFETY SYSTEMS INTERFACES**

- A. Supervision: Provide supervisory signals in accordance with NFPA 72 for the following:
1. Sprinkler water control valves.
- B. Alarm: Provide alarm initiation in accordance with NFPA 72 for the following:
1. Sprinkler water flow.

#### **2.03 COMPONENTS**

- A. General:
1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
  2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.
- B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.
- C. Initiating Devices:
1. Addressable Systems:
    - a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
    - b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.

- D. Circuit Conductors: Copper or optical fiber; provide 200 feet extra; color code and label.
- E. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.
  - 1. Equipment Connected to Alternating Current Circuits: Maximum let through voltage of 350 V(ac), line-to-neutral, and 350 V(ac), line-to-line; do not use fuses.
  - 2. Initiating Device Circuits, Notification Appliance Circuits, and Communications Circuits: Provide surge protection at each point where circuit exits or enters a building; rated to protect applicable equipment; for 24 V(dc) maximum dc clamping voltage of 36 V(dc), line-to-ground, and 72 V(dc), line-to-line.
  - 3. Signaling Line Circuits: Provide surge protection at each point where circuit exits or enters a building, rated to protect applicable equipment.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.
- B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.
- C. Obtain State of Delaware OMB - Division of Facilities Management's approval of locations of devices, before installation.
- D. Install instruction cards and labels.

#### **3.02 INSPECTION AND TESTING FOR COMPLETION**

- A. Notify State of Delaware OMB - Division of Facilities Management 7 days prior to beginning completion inspections and tests.
- B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
- C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.
- D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.
- E. Provide all tools, software, and supplies required to accomplish inspection and testing.
- F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.
- G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.
- H. Diagnostic Period: After successful completion of inspections and tests, Operate system in normal mode for at least 14 days without any system or equipment malfunctions.
  - 1. Record all system operations and malfunctions.
  - 2. If a malfunction occurs, start diagnostic period over after correction of malfunction.
  - 3. State of Delaware OMB - Division of Facilities Management will provide attendant operator personnel during diagnostic period; schedule training to allow State of Delaware OMB - Division of Facilities Management personnel to perform normal duties.
  - 4. At end of successful diagnostic period, fill out and submit NFPA 72 "Inspection and Testing Form."

#### **3.03 STATE OF DELAWARE OMB - DIVISION OF FACILITIES MANAGEMENT PERSONNEL INSTRUCTION**

- A. Provide the following instruction to designated State of Delaware OMB - Division of Facilities Management personnel:
  - 1. Hands-On Instruction: On-site, using operational system.
  - 2. Classroom Instruction: State of Delaware OMB - Division of Facilities Management furnished classroom, on-site or at other local facility.

- B. Administrative: One-hour session(s) covering issues necessary for non-technical administrative staff; classroom:
  - 1. Initial Training: 1 session pre-closeout.
- C. Basic Operation: One-hour sessions for attendant personnel, security officers, and engineering staff; combination of classroom and hands-on:
  - 1. Initial Training: 1 session pre-closeout.
- D. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data available during instruction.

### 3.04 CLOSEOUT

- A. Closeout Demonstration: Demonstrate proper operation of all functions to State of Delaware OMB - Division of Facilities Management.
  - 1. Be prepared to conduct any of the required tests.
  - 2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
  - 3. Have authorized technical representative of control unit manufacturer present during demonstration.
  - 4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
  - 5. Repeat demonstration until successful.
- B. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
  - 1. Specified diagnostic period without malfunction has been completed.
  - 2. Approved operating and maintenance data has been delivered.
  - 3. Spare parts, extra materials, and tools have been delivered.
  - 4. All aspects of operation have been demonstrated to State of Delaware OMB - Division of Facilities Management.
  - 5. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
  - 6. Specified pre-closeout instruction is complete.

### 3.05 MAINTENANCE

- A. See Section 01 77 00 - Closeout Procedures, for additional requirements relating to maintenance service.
- B. Provide to State of Delaware OMB - Division of Facilities Management, at no extra cost, a written maintenance contract for entire manufacturer's warranty period, to include the work described below.
- C. Perform routine inspection, testing, and preventive maintenance required by NFPA 72, including:
  - 1. Maintenance of fire safety interface and supervisory devices connected to fire alarm system.
  - 2. Repairs required, unless due to improper use, accidents, or negligence beyond the control of the maintenance contractor.
  - 3. Record keeping required by NFPA 72 and authorities having jurisdiction.
- D. Provide trouble call-back service upon notification by State of Delaware OMB - Division of Facilities Management:
  - 1. Provide on-site response within 2 hours of notification.
  - 2. Include allowance for call-back service during normal working hours at no extra cost to State of Delaware OMB - Division of Facilities Management.
  - 3. State of Delaware OMB - Division of Facilities Management will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

- E. Provide a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.
- F. Maintain a log at each fire alarm control unit, listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced. Submit duplicate of each log entry to State of Delaware OMB - Division of Facilities Management's representative upon completion of site visit.
- G. Comply with State of Delaware OMB - Division of Facilities Management's requirements for access to facility and security.

**END OF SECTION**

NOT FOR BIDDING PURPOSES