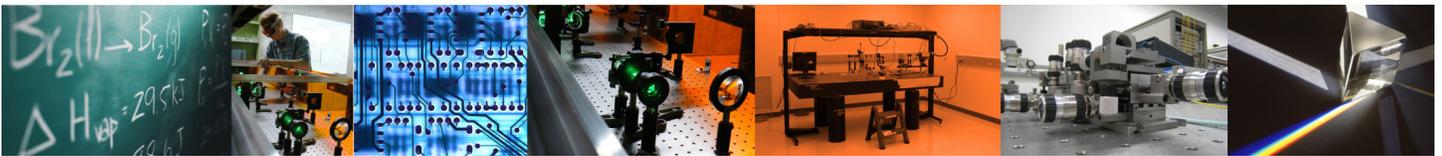


**dsu** delaware state university : optical science center for applied research



**Construction Documents - Volume 1**

Divisions 00 through 01

04 October 2013

**richärd + bauer**

in association with  
becker morgan group  
and ballinger

**VOLUME ONE**

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The actual drawings in the set supersede any discrepancies with this list. This list will be updated prior to inclusion in the successful bidder's contract in accordance with any revisions or addenda. This entire section will be attached to the contract.

All bidders are responsible to review all drawings and include all necessary work related to their trade on any and all drawings.

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SKC-006	C-501	10/25/2013
SKC-007	C-903	10/25/2013
SKL-01 add01	Landscape Plan	10/25/2013
SKL-02 add01	Landscape Plan	10/25/2013
SKL-03 add03	Landscape Plan	10/25/2013
SKA-01 add01	2/A2.0	10/30/2013
SKA-02 add01	1/A2.0	10/30/2013
SKA-03 add01	1/A3.0	10/30/2013
SKA-04 add01	1/A2.3, 2/A5.0, 3/A5.0	10/30/2013
SKA-05 add01	6/A8.1	10/30/2013
SKA-06 add01	5/A10.0	10/30/2013
SKA-07 add01	7/A11.0	10/30/2013
SKA-08 add01	7/A11.3	10/30/2013
SKA-09 add01	10/A11.4	10/30/2013
SKA-10 add01	16/A14.3	10/30/2013
SKA-12 add01	1/A2.1DIM	10/30/2013
SKA-13 add01	3/A8.3, 4/A8.3	10/30/2013
SKA-01 add01	S1.1	10/30/2013
SKS-02 add01	S1.2	10/30/2013
SKS-03 add01	S1.4	10/30/2013
SKS-04 add01	S1.5	10/30/2013
SKS-05 add01	8/S2.1	10/30/2013
SKS-06 add01	9/S2.1	10/30/2013
SKS-07 add01	4/S2.2	10/30/2013
SKS-08 add01	2,2A/S2.4	10/30/2013
SKS-09 add01	1,1A & 1B/S3.2	10/30/2013
SKS-10 add01	10/S3.2	10/30/2013
SKS-11 add01	12,13/S3.2	10/30/2013
SKS-12 add01	16/S3.2	10/30/2013
SKS-13 add01	3/S3.3	10/30/2013
SKS-14 add01	6,7/S3.3	10/30/2013
SKS-15 add01	8/S3.3	10/30/2013
SKS-16 add01	9/S3.3	10/30/2013
SKS-17 add01	13,13A/S3.3	10/30/2013
SKS-18 add01	15/S3.3	10/30/2013
SKS-19 add01	17/S3.3	10/30/2013
SKS-20 add01	10,11/S4.1	10/30/2013
SKS-21 add01	5/S6.1	10/30/2013
SKS-22 add01	13/S2.1	10/30/2013
SKS-23 add01	1/S4.1	10/30/2013
SKM-01 add01	1/M2.0	10/30/2013
SKM-02 add01	2/M2.0	10/30/2013
SKM-03 add01	M2.0	10/30/2013
SKM-04 add01	M2.1	10/30/2013
SKM-05 add01	M2.1	10/30/2013
SKM-06 add01	M2.2	10/30/2013
SKM-07 add01	M2.2	10/30/2013
SKM-08 add01	M2.3	10/30/2013

SKM-09 add01	2,4/M2.3	10/30/2013
SKM-10 add01	M3.5	10/30/2013
SKM-11 add01	M5.3	10/30/2013
SKM-12 add01	M6.1	10/30/2013
SKM-13 add01	M6.3	10/30/2013
SKP-01 add01	P2.0	10/30/2013
SKP-02 add01	P2.1	10/30/2013
SKP-03 add01	P2.1	10/30/2013
SKP-04 add01	P2.2	10/30/2013
SKP-05 add01	P2.3	10/30/2013
SKP-06 add01	P2.9	10/30/2013
SKP-07 add01	P3.1	10/30/2013
SKP-08 add01	P2.7	10/30/2013
SKP-09 add01	P2.4	10/30/2013
SKP-10 add01	P3.2	10/30/2013
SKP-11 add01	P5.2	10/30/2013
SKP-12 add01	P5.0	10/30/2013
SKP-13 add01	P6.0	10/30/2013
SKE-01 add01	ES1.1	10/30/2013
SKE-02 add01	EP2.1	10/30/2013
SKE-03 add01	EP2.2	10/30/2013
SKE-04 add01	EP2.3	10/30/2013
SKE-05 add01	EP2.4	10/30/2013
SKE-06 add01	E5.1	10/30/2013
SKF-01 add01	F0.1	10/25/2013
SKF-02 add01	F1.2	10/25/2013
SKC-008	C-201	11/7/2013
SKC-009	C-901	11/7/2013
SKA-01 add02	Mock-up Sketch	11/7/2013
SKA-02 add02	1/A7.3	11/7/2013
SKA-03 add02	7/A11.1	11/7/2013
SKA-04 add02	8/A14.2	11/7/2013
SKA-05 add02	8,11/A12.0	11/7/2013
SKA-06 add02	2,3n/A5.2	11/7/2013
SKA-07 add02	1/A8.3	11/7/2013
SKA-08 add03	1,2/A14.3	11/14/2013
SKA-09 add03	16/A14.3	11/14/2013
SKA-10 add03	A11.3	11/14/2013
SKA-11 add03	7/A11.2	11/14/2013
SKA-12 add03	1/A5.0	11/14/2013
SKA-13 add03	10,13/A13.0	11/14/2013
SKA-14 add03	A11.8	11/14/2013
SKS-24 add03	11/S2.1	11/14/2013
SKS-25 add03	2/S4.1	11/14/2013
SKM-14 add03	M6.3	11/14/2013
SKM-15 add03	M6.3	11/14/2013

SKM-16 add03	M6.3	11/14/2013
SKP-14	P2.9	11/14/2013
SKB-01 add03	BA2.03A	11/14/2013
SKB-02 add03	BA2.05A	11/14/2013
SKB-03 add03	BA2.05A	11/14/2013
SKE-07 add03	EP3.1	10/30/2013

END OF SECTION 000115

SECTION 00200 – ADVERTISEMENT FOR **RE-BID (REVISED ADDENDUM 4)**

**Delaware State University – Optical Science Center for Applied Research (OSCAR).** There will be a **NON MANDATORY** pre-bid meeting on December 9, 2013 at 10:00 am **at Delaware State University’s Education and Humanity Building, Main Theater.** The following are the **RE-bid** offerings:

**Glass, Glazing & Aluminum/Skylights: Bid # 08A**

All bids will be publicly opened in the **Education and Humanity Building, Main Theater on December 17, 2013 at 11:00 AM.** Time and place for opening of bids may be extended from that described above on not less than two calendar days’ notice by certified delivery, facsimile machine, or other verifiable electronic means to those bidders who obtained copies of the plans and specifications.

Construction documents will be available for review immediately upon request from Whiting-Turner (Please call Josh George or Luke Dubas at 302-292-0676 or email [joshua.george@whiting-turner.com](mailto:joshua.george@whiting-turner.com) or [luke.dubas@whiting-turner.com](mailto:luke.dubas@whiting-turner.com) . Documents may be viewed at the Whiting-Turner Contracting Company Newark office.

Minority Business Enterprises (MBE), Disadvantaged Business Enterprises (DBE) and Women-Owned Business Enterprises (WBE) will be afforded full opportunity to submit bids on this contract and will not be subject to discrimination on the basis of race, color, national origin or sex in consideration of this award. 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. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days’ notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

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END OF SECTION 00200

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SECTION 00250 – INVITATION TO BID (REVISED ADDENDUM 4)

Sealed bids for Delaware State University – Optical Science Center for Applied Research (OSCAR) will be received by Delaware State University at **Delaware State University's Education and Humanity Building #32, Main Theater** until 2:00 p.m. local time on Thursday, December 17, 2013, at which time they will be publicly opened and read aloud. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

**Glass, Glazing & Aluminum/Skylights: Bid #08A**

Project involves the construction of a new 27,500 SF Optical Lab/Research Building with associated site development and improvements. The project site is located at 1200 N. DuPont Highway, Dover, Delaware.

Attention is called to construction schedule as detailed in the Bid Documents.

A **NON MANDATORY** Pre-Bid Meeting will be held on December 9, 2013 at 10:00 AM at **State University's Education and Humanity Building #32, Main Theater** to answer questions.

Sealed bids shall be addressed to the Delaware State University 1200 N. DuPont Highway, Dover, DE. The outer envelope should clearly indicate: "**DSU - Optical Science Center for Applied Research – WT Job # 13565 – BID PACKAGE #08A – SEALED BID – DO NOT OPEN.**"

All bids will be publicly opened at **Delaware State University's Education and Humanity Building #32, Main Theater** on December 17, 2013 at 11:00 AM. Time and place for opening of bids may be extended from that described above on not less than two calendar days' notice by certified delivery, facsimile machine, or other verifiable electronic means to those bidders who obtained copies of the plans and specifications.

Construction documents will be available for review immediately upon request from Whiting-Turner (Please call Josh George or Luke Dubas at 302-292-0676 or email [Joshua.George@whiting-turner.com](mailto:Joshua.George@whiting-turner.com) or [Luke.Dubas@whiting-turner.com](mailto:Luke.Dubas@whiting-turner.com) . Documents may be viewed at the Whiting-Turner Contracting Company Newark office.

Minority Business Enterprises (MBE), Disadvantaged Business Enterprises (DBE) and Women-Owned Business Enterprises (WBE) will be afforded full opportunity to submit bids on this contract and will not be subject to discrimination on the basis of race, color, national origin or sex in consideration of this award. 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. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days' notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

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END OF SECTION 00250

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SECTION 00300 – 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**

**1.0 DEFINITIONS**

Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

STATE: The State of Delaware.

AGENCY: Contracting State Agency as noted on cover sheet.

DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

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.

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.

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.

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.

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.

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.

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.

**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.

**BID:** A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

**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).

**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.

**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.

**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.

**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.

**CONTRACT:** The written agreement covering the furnishing and delivery of material or work to be performed.

**CONTRACTOR:** Any individual, firm or corporation with whom a contract is made by the Agency.

**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.

**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 not 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 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 party in the Joint Venture 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 parties in the Joint Ventures involved.
- 2.3.3 All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by all parties in the Joint Ventures and be placed in all of their names.
- 2.3.4 All required insurance certificates shall name all parties in the Joint Ventures.
- 2.3.5 All parties in the Joint Ventures shall sign the Bid Form and shall submit a valid Delaware Business License Number with their Bid or shall state that the process of application for a Delaware Business License has been initiated.
- 2.3.6 All parties in the Joint Ventures shall include their Federal E.I. Number with the Bid.
- 2.3.7 In the event of a mandatory Pre-bid Meeting, all parties in the Joint Ventures 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.

### 3.1 COPIES OF BID DOCUMENTS

- 3.1.1 Bidders may obtain complete sets of the Bidding Documents from RCI (302-528-3019) 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 CM 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 CM.
- 3.2.2 Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the CM 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 CM 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 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.
- 4.2 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 As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.
- 4.3.2 Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.
- 4.3.3 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 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

- 4.4.1 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, color, sex or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
  - B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.

#### 4.5 PREVAILING WAGE REQUIREMENT

- 4.5.1 Wage Provisions: In accordance with Delaware Code, Title 29, Section 6960, renovation projects whose total cost shall exceed \$15,000, and \$100,000 for new construction, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware.

- 4.5.2 The prevailing wage shall be the wage paid to a majority of employees performing similar work as reported in the Department's annual prevailing wage survey or in the absence of a majority, the average paid to all employees reported.
- 4.5.3 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.
- 4.5.4 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.
- 4.5.5 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.

#### 4.6 SUBMISSION OF BIDS

- 4.6.1 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.
- 4.6.2 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.
- 4.6.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.
- 4.6.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.
- 4.6.5 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.

#### 4.7 MODIFICATION OR WITHDRAW OF BIDS

- 4.7.1 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.

- 4.7.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.
- 4.7.3 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. 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 effect for period of one year after the date of substantial completion.
- 5.4.6 If the successful Bidder fails to execute the required Contract and Bond, as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the 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 re-advertised, 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) or a Delaware business license number, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification or Delaware business 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. Prior to execution of the resulting contract, the successful Bidder shall be required to produce proof of its Delaware business license if not provided in its bid.
- 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 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.

## **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 A132-2009 Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition.

END OF SECTION 00300

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SECTION 00400 – BID FORM (REVISED ADDENDUM 4)

For Bids Due: December 17, 2013

To: Delaware State University  
1200 N. DuPont Highway  
Dover, DE 19901

Bid Package: 08A - GLASS, GLAZING, CURTAINWALL & SKYLIGHT

Name of Bidder: \_\_\_\_\_

Delaware Business License No.: \_\_\_\_\_ Taxpayer ID No.: \_\_\_\_\_

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

Phone No.: \_\_\_\_\_

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

BASE BID: \$ \_\_\_\_\_ Dollars  
( \$ \_\_\_\_\_ )

ALTERNATES – See Division 01 – Section 01025 for complete description of alternates (Addendum 3 4)

Not all of the blank spaces may be required. Alternate prices are to conform to applicable project specification sections or drawing details. An “ADD” or “DEDUCT” amount is indicated by circling whichever is applicable. If an alternate does not apply to a specific bid package, insert: “Not Applicable”

~~ALTERNATE NO. 9:~~

Add / Deduct (circle one): \_\_\_\_\_ Dollars  
{ \$ \_\_\_\_\_ }

ALTERNATE NO. 12:

Add / Deduct (circle one): \_\_\_\_\_ Dollars  
{ \$ \_\_\_\_\_ }

**UNIT PRICES – See specific Scope of Work for unit pricing description:**

Unit prices conform to applicable project specification section. Refer to the specifications and/or specific scope of work for a complete description of required unit prices for this bid package. Not all of the blank spaces below may be required.

None (Addendum ③)

I/We acknowledge the receipt of addenda as listed below and the price(s) submitted include any cost/schedule impact they may have.

<b>Addendum Number</b>	<b>Date of Addendum</b>
1-4	Base Bid Package
_____	_____
_____	_____
_____	_____
_____	_____

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

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 Subcontractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to complete all the work required in accordance with the project schedule included in specification section 01780.

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 (circle one)

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

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

**Witness:** \_\_\_\_\_ **By:** \_\_\_\_\_  
(Authorized Signature)  
\_\_\_\_\_  
(Printed Name and Title)  
**Date:** \_\_\_\_\_

**ATTACHMENTS**

- Subcontractor List (See Section 00450 and any updates by addenda)
- Non-Collusion Statement
- Bid Security (Deposit or Bid Bond)

**BID FORM**

**Bid Package #:** 08A - GLASS, GLAZING, CURTAINWALL & SKYLIGHT

**SUBCONTRACTOR LIST**

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

**NOTE: Subcontractor categories specific to each bid package are listed in specification section 00450 and will be updated at the pre-bid meeting and via addendum. If no categories are requested for a bid package, then none are required to be submitted. Refer to specification section 00450 and any addenda that may modify the required listing.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City &amp; State) &amp; License #</u>
_____	_____	City _____ State _____ License # _____

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City &amp; State) &amp; License #</u>
_____	_____	City _____ State _____ License # _____

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City &amp; State) &amp; License #</u>
_____	_____	City _____ State _____ License # _____

**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 **Delaware State University. (Addendum 4)**

All the terms and conditions of Bid #08A - GLASS, GLAZING, CURTAINWALL & SKYLIGHT have been thoroughly examined and are understood.

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

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

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 2013

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

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

END OF SECTION 00400

SECTION 00430 – BID BOND

**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. \_\_\_\_\_, to be paid to the **State** for the use and  
benefit of \_\_\_\_\_ (*insert State agency name*) 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 \_\_\_\_\_ (*insert State agency name*) 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 \_\_\_\_\_  
\_\_\_\_\_ (*insert State agency name*) 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

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SECTION 00440 – SUBCONTRACTOR APPROVAL

1. Refer to the following section 00450 for any subcontractors or material suppliers to be listed on the bid form.
2. The Construction Manager / Owner will use the following criteria to determine qualifications for any Contractor for listing as a Subcontractor in any trade area:
  - a. The Contractor regularly employs and continuously maintains on his payroll skilled craftsmen in the trade. These skilled craftsmen shall be registered in the trade when such registration is required.
  - b. The Contractor owns the tools and equipment normally associated with the trade.
  - c. The Contractor has previously performed work in the trade which is similar in scope, size, complexity and cost to the proposed construction.
  - d. The Contractor must have or must have applied for a Delaware Business License prior to bidding the project.
3. The Construction Manager / Owner may challenge or disqualify any Contractor based on failure to meet any of the above criteria for qualification for listing as Subcontractor in a trade. Bidders may be required to present such evidence as deemed necessary to evaluate qualifications. The decision to disqualify a Contractor in a given trade shall be made by the Owner and all decisions shall be final.
4. The Subcontractor listing is provided for information only to the construction manager and the Owner if the Subcontractor category was not requested at the pre-bid meeting or requested by the CM or Owner.

END OF SECTION 00440

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SECTION 00450 – LISTING OF SUBCONTRACTORS (REVISED ADDENDUM 4)

Where the Bidder intends to perform the work with his own forces, his name is listed as a subcontractor.

Fill out the required information on the bid form:

<u>BID PACKAGE #</u>	<u>BID PACKAGE DESCRIPTION</u>	<u>SUBCONTRACTOR / SUPPLIER CATEGORY TO BE LISTED ON BID FORM</u>
08A	Glass, Glazing, Curtainwall, Skylight	Glass, Aluminum, Curtainwall, Skylight

END OF SECTION 00450

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SECTION 00520 – STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR,  
CONSTRUCTION MANAGER AS ADVISER EDITION (AIA 132 – 2009; 11 PAGES)

END OF SECTION 00520

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# DRAFT AIA<sup>®</sup> Document A132<sup>™</sup> - 2009

## **Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition**

**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)

«Delaware State University »« »  
«1200 N. DuPont Highway»  
«Dover, DE 19901»  
« »

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

« »« »  
« »  
« »  
« »

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

«Optical Science Center for Applied Research»  
«1200 N. DuPont Highway»  
«Dover, DE 19901»

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

«The Whiting-Turner Contracting Company »« »  
«131 Continental Drive, Suite 404»  
«Newark, DE 19713»  
« »

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

«Richard + Bauer »« »  
«1545 West Thomas Road»  
«Phoenix, AZ 85015»  
« »

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.

This document is intended to be used in conjunction with AIA Documents A232<sup>™</sup>-2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132<sup>™</sup>-2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132<sup>™</sup>-2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

AIA Document A232<sup>™</sup>-2009 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

**ELECTRONIC COPYING** of any portion of this AIA<sup>®</sup> Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

**TABLE OF ARTICLES**

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**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 Modifications, 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 the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

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

« »

If, prior to the commencement of the Work, the Owner requires time to file mortgages, mechanics' liens and other security interests, the Owner's time requirement shall be as follows:

« »

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

**§ 3.3** The Contractor shall achieve Substantial Completion of the entire Work not later than « » ( « » ) days from the date of commencement, or as follows:

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

« »

Portion of the Work

Substantial Completion Date

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

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

<< >>

**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 one of the following:

(Check the appropriate box.)

[ **« X »** ] Stipulated Sum, in accordance with Section 4.2 below

[ **« »** ] Cost of the Work plus the Contractor's Fee without a Guaranteed Maximum Price, in accordance with Section 4.3 below

[ **« »** ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below. Based on the selection above, also complete either Section 5.1.4, 5.1.5 or 5.1.6 below.)

**§ 4.2 Stipulated Sum**

**§ 4.2.1** The Stipulated Sum shall be  [ **« »** ] (\$  [ **« »** ]), subject to additions and deletions as provided in the Contract Documents.

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

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

<< >>

**§ 4.2.3** Unit prices, if any:

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

Item	Units and Limitations	Price per Unit (\$0.00)
<input type="checkbox"/> [ <b>« »</b> ]	<input type="checkbox"/> [ <b>« »</b> ]	<input type="checkbox"/> [ <b>« »</b> ]

**§ 4.2.4** Allowances included in the Stipulated Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Allowance
<input type="checkbox"/> [ <b>« »</b> ]	<input type="checkbox"/> [ <b>« »</b> ]

**§ 4.3 Cost of the Work Plus Contractor's Fee without a Guaranteed Maximum Price**

**§ 4.3.1** The Contract Sum is the Cost of the Work as defined in Exhibit A, Determination of the Cost of the Work, plus the Contractor's Fee.

**§ 4.3.2** The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

<< >>

§ 4.3.3 The method of adjustment of the Contractor's Fee for changes in the Work:

<< >>

§ 4.3.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

<< >>

§ 4.3.5 Rental rates for Contractor-owned equipment shall not exceed << >> percent ( << >> %) of the standard rate paid at the place of the Project.

§ 4.3.6 Unit prices, if any:

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

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

§ 4.3.7 The Contractor shall prepare and submit to the Construction Manager for the Owner, in writing, a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the items in Section A.1 of Exhibit A, Determination of the Cost of the Work.

**§ 4.4 Cost of the Work Plus Contractor's Fee with a Guaranteed Maximum Price**

§ 4.4.1 The Contract Sum is the Cost of the Work as defined in Exhibit A, Determination of the Cost of the Work, plus the Contractor's Fee.

§ 4.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

<< >>

§ 4.4.3 The method of adjustment of the Contractor's Fee for changes in the Work:

<< >>

§ 4.4.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

<< >>

§ 4.4.5 Rental rates for Contractor-owned equipment shall not exceed << >> percent ( << >> %) of the standard rate paid at the place of the Project.

§ 4.4.6 Unit Prices, if any:

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

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

**§ 4.4.7 Guaranteed Maximum Price**

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

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

« »

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

« »

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

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

**Item**

**Allowance**

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

« »

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and upon certification of the Project Application and Project Certificate for Payment or Application for Payment and Certificate for Payment by the Construction Manager and Architect and issuance 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 Construction Manager not later than the « » day of a month, the Owner shall make payment of the certified amount in the Application for Payment to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment shall be made by the Owner not later than « » ( « » ) days after the Construction Manager receives the Application for Payment.

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

### § 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 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 and be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 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.

§ 5.1.4.3 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « » percent ( « » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3.9 of the General Conditions;

- .2 Add 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), less retainage of « » percent ( « » %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Construction Manager or Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of the General Conditions.

§ 5.1.4.4 The progress payment amount determined in accordance with Section 5.1.4.3 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to « » percent ( « » %) of the Contract Sum, less such amounts as the Construction Manager recommends and the Architect determines for incomplete Work and unsettled claims; and
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of the General Conditions.

§ 5.1.4.5 Reduction or limitation of retainage, if any, shall be as follows:

*(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.4.3.1 and 5.1.4.3.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)*

« »

#### § 5.1.5 Progress Payments Where the Contract Sum is Based on the Cost of the Work without a Guaranteed Maximum Price

§ 5.1.5.1 With each Application for Payment, the Contractor shall submit the cost control information required in Exhibit A, Determination of the Cost of the Work, along with payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 5.1.5.2 Applications for Payment shall show the Cost of the Work actually incurred by the Contractor through the end of the period covered by the Application for Payment and for which the Contractor has made or intends to make actual payment prior to the next Application for Payment.

§ 5.1.5.3 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take the Cost of the Work as described in Exhibit A, Determination of the Cost of the Work;
- .2 Add the Contractor's Fee, less retainage of « » percent ( « » %). The Contractor's Fee shall be computed upon the Cost of the Work described in that Section at the rate stated in that Section; or if the Contractor's Fee is stated as a fixed sum, an amount which bears the same ratio to that fixed-sum Fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .3 Subtract retainage of « » percent ( « » %) from that portion of the Work that the Contractor self-performs;
- .4 Subtract the aggregate of previous payments made by the Owner;
- .5 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Article 5 or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- .6 Subtract amounts, if any, for which the Construction Manager or Architect has withheld or withdrawn a Certificate for Payment as provided in Section 9.5 of AIA Document A232™-2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

§ 5.1.5.4 The Owner, Construction Manager and Contractor shall agree upon (1) a mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.5.5 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Construction Manager and Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Article 5 or other supporting data; that the Construction Manager and Architect have made exhaustive or continuous on-site inspections; or that the Construction Manager and Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.5.6 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.

**§ 5.1.6 Progress Payments Where the Contract Sum is Based on the Cost of the Work with a Guaranteed Maximum Price**

§ 5.1.6.1 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 5.1.6.2 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 and be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.6.3 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. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work for which the Contractor has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 5.1.6.4 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.10 of AIA Document A232-2009;
- .2 Add that portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work, or if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing;
- .3 Add the Contractor's Fee, less retainage of « » percent ( « » %). The Contractor's Fee shall be computed upon the Cost of the Work at the rate stated in Section 4.4.2 or, if the Contractor's Fee is stated as a fixed sum in that Section, shall be an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .4 Subtract retainage of « » percent ( « » %) from that portion of the Work that the Contractor self-performs;
- .5 Subtract the aggregate of previous payments made by the Owner;

- .6 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.6.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- .7 Subtract amounts, if any, for which the Construction Manager or Architect have withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A232-2009.

§ 5.1.6.5 The Owner and the Contractor shall agree upon a (1) mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.6.6 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Construction Manager or Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Section 5.1.6.1 or other supporting data; that the Construction Manager or Architect have made exhaustive or continuous on-site inspections; or that the Construction Manager or Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.6.7 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 Section 12.2 of AIA Document A232-2009, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Exhibit A, Determination of the Cost of the Work when payment is on the basis of the Cost of the Work, with or without a Guaranteed Maximum payment; and
- .3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

« »

**ARTICLE 6 DISPUTE RESOLUTION**

**§ 6.1 Initial Decision Maker**

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A232-2009, unless the parties appoint below another individual, not a party to this Agreement, to serve as 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 Section 15.3 of AIA Document A232-2009, the method of binding dispute resolution shall be as follows:

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

[ « » ] Arbitration pursuant to Section 15.4 of AIA Document A232-2009.

[ « » ] Litigation in a court of competent jurisdiction.

[ « » ] Other: *(Specify)*

« »

## ARTICLE 7 TERMINATION OR SUSPENSION

### § 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2009.

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2009.

### § 7.2 Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price

§ 7.2.1 Subject to the provisions of Section 7.2.2 below, the Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2009.

§ 7.2.2 The Contract may be terminated by the Owner for cause as provided in Article 14 of AIA Document A232–2009; however, the Owner shall then only pay the Contractor an amount calculated as follows:

- .1 Take the Cost of the Work incurred by the Contractor to the date of termination;
- .2 Add the Contractor's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Sections 4.3.2 or 4.4.2, as applicable, or, if the Contractor's Fee is stated as a fixed sum, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and
- .3 Subtract the aggregate of previous payments made by the Owner.

§ 7.2.3 If the Owner terminates the Contract for cause when the Contract Sum is based on the Cost of the Work with a Guaranteed Maximum Price, and as provided in Article 14 of AIA Document A232–2009, the amount, if any, to be paid to the Contractor under Section 14.2.4 of AIA Document A232–2009 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed the amount calculated in Section 7.2.2.

§ 7.2.4 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders.

§ 7.2.5 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2009; in such case, the Contract Sum and Contract Time shall be increased as provided in Section 14.3.2 of AIA Document A232–2009, except that the term 'profit' shall be understood to mean the Contractor's Fee as described in Sections 4.3.2 and 4.4.2 of this Agreement.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2009 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 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.)*

« » % « »

**§ 8.3** The Owner's representative:  
(Name, address and other information)

<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

**§ 8.4** The Contractor's representative:  
(Name, address and other information)

<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

**§ 8.5** Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

**§ 8.6** Other provisions:

<< >>

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

**§ 9.1** The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

**§ 9.1.1** The Agreement is this executed AIA Document A132-2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition.

**§ 9.1.2** The General Conditions are, AIA Document A232-2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

**§ 9.1.3** The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

**§ 9.1.4** The Specifications:  
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

<< >>

Section	Title	Date	Pages

**§ 9.1.5** The Drawings:  
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

<< >>

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

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

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

- .1 AIA Document A132™–2009, Exhibit A, Determination of the Cost of the Work, if applicable.
- .2 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:
- .3 AIA Document E202™–2008, Building Information Modeling Protocol Exhibit, if completed, or the following:
- .4 Other documents, if any, listed below:  
*(List here any additional documents which are intended to form part of the Contract Documents. AIA Document A232–2009 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor’s bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)*

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A232–2009.  
*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A232–2009.)*

Type of Insurance or Bond	Limit of Liability or Bond Amount (\$0.00)

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

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

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

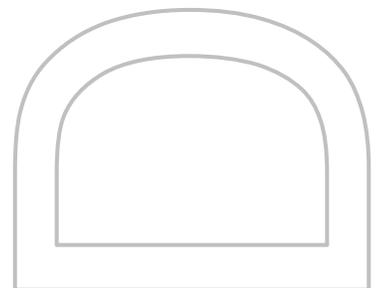
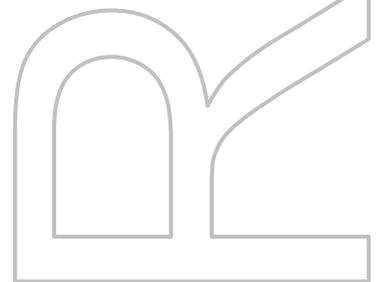
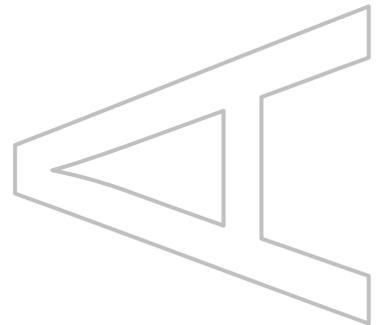
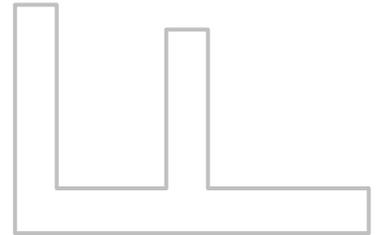
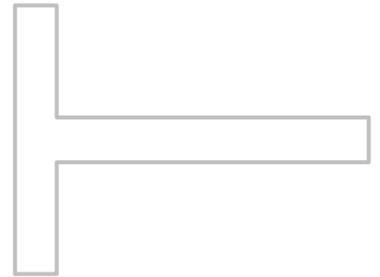
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\_\_\_\_\_

*(Printed name and title)*

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SECTION 00540 – SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR, CONSTRUCTION  
MANAGER AS ADVISER EDITION A132-2009

The following supplements modify the “Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition,” AIA Document A132-2009. 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 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 Construction Manager 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.”

**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 8: MISCELLANEOUS PROVISIONS**

8.2 Insert the following:

"Payments are due 30 days after receipt of a valid Application for Payment. After that 30 day period, interest may be charged at the rate of 1% per month not to exceed 12% per annum."

8.5 Delete paragraph 8.5 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 00540

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SECTION 00600 – PERFORMANCE BOND

**PERFORMANCE BOND**

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

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

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

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

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

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

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

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

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

PRINCIPAL

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

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

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

(Corporate Seal)

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

SURETY

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

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

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

(Corporate Seal)

By: \_\_\_\_\_  
Name:  
Title:

**END OF SECTION 00600**

SECTION 00610 – PAYMENT BOND

**PAYMENT BOND**

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

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

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

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

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

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

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



SECTION 00620 – APPLICATION & CERTIFICATE FOR PAYMENT (AIA G732 – 2009; 1 PAGE)

END OF SECTION 00620

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# DRAFT AIA® Document G732™ - 2009

## Application and Certificate for Payment, Construction Manager as Adviser Edition

<b>TO OWNER:</b>	<b>PROJECT:</b> A Blanks	<b>APPLICATION NO:</b> 001	<b>DISTRIBUTION TO:</b>
		<b>PERIOD TO:</b>	OWNER <input type="checkbox"/>
<b>FROM CONTRACTOR:</b>	<b>VIA CONSTRUCTION MANAGER:</b>	<b>CONTRACT DATE:</b>	CONSTRUCTION MANAGER <input type="checkbox"/>
		<b>PROJECT NOS:</b> / /	ARCHITECT <input type="checkbox"/>
	<b>VIA ARCHITECT:</b>		CONTRACTOR <input type="checkbox"/>
			FIELD <input type="checkbox"/>

**CONTRACT FOR:** General Construction

### CONTRACTOR'S APPLICATION FOR PAYMENT

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

<b>1. ORIGINAL CONTRACT SUM</b> .....	\$0.00
<b>2. NET CHANGES IN THE WORK</b> .....	\$0.00
<b>3. CONTRACT SUM TO DATE (Line 1 ± 2)</b> .....	\$0.00
<b>4. TOTAL COMPLETED AND STORED TO DATE (Column G on G703)</b> .....	\$0.00
<b>5. RETAINAGE:</b>	
a. 0 % of Completed Work (Column D + E on G703: \$0.00 ) = \$0.00	
b. 0 % of Stored Material (Column F on G703: \$0.00 ) = \$0.00	
Total Retainage (Lines 5a + 5b, or Total in Column I on G703) .....	\$0.00
<b>6. TOTAL EARNED LESS RETAINAGE</b> .....	\$0.00
(Line 4 minus Line 5 Total)	
<b>7. LESS PREVIOUS CERTIFICATES FOR PAYMENT</b> .....	\$0.00
(Line 6 from prior Certificate)	
<b>8. CURRENT PAYMENT DUE</b> .....	\$0.00
<b>9. BALANCE TO FINISH, INCLUDING RETAINAGE</b>	
(Line 3 minus Line 6)	\$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: \_\_\_\_\_

### CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on evaluations of the Work and the data comprising this application, the Construction Manager and Architect certify to the Owner that to the best of their 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.)

**CONSTRUCTION MANAGER:**  
By: \_\_\_\_\_ Date: \_\_\_\_\_

**ARCHITECT:** (NOTE: If Multiple Prime Contractors are responsible for performing portions of the Project, the Architect's Certification is not required.)

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.

SUMMARY OF CHANGES IN THE WORK	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this month including Construction Change Directives	\$0.00	\$0.00
<b>TOTALS</b>	\$0.00	\$0.00
<b>NET CHANGES IN THE WORK</b>		\$0.00

SECTION 00625 – CONTINUATION SHEET FOR G702 (AIA G703 – 1992; 1 PAGE)

END OF SECTION 00625

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SECTION 00700 – GENERAL CONDITIONS TO THE CONTRACT FOR CONSTRUCTION  
(AIA 232 – 2009; 43 PAGES)

END OF SECTION 00700

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# DRAFT AIA<sup>®</sup> Document A232<sup>™</sup> - 2009

## *General Conditions of the Contract for Construction, Construction Manager as Adviser Edition*

**for the following PROJECT:**

*(Name, and location or address)*

<< >>  
<< >>

**THE CONSTRUCTION MANAGER:**

*(Name, legal status and address)*

<< >>< >>  
<< >>

**THE OWNER:**

*(Name, legal status and address)*

<< >>< >>  
<< >>

**THE ARCHITECT:**

*(Name, legal status and address)*

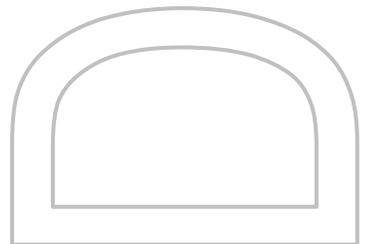
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**ADDITIONS AND DELETIONS:**

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

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

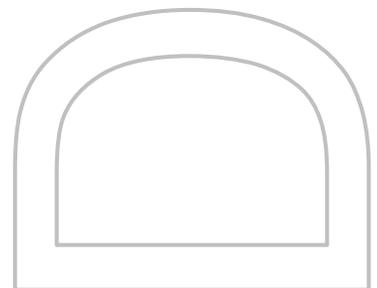
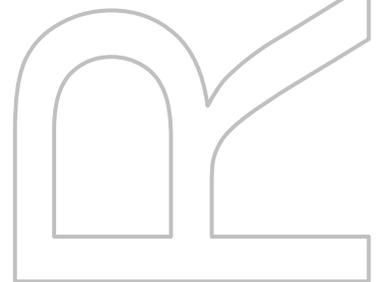
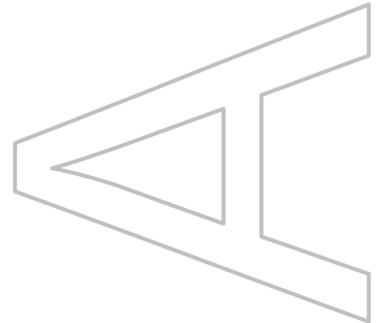
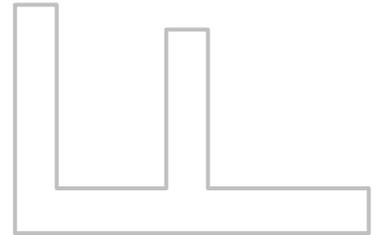
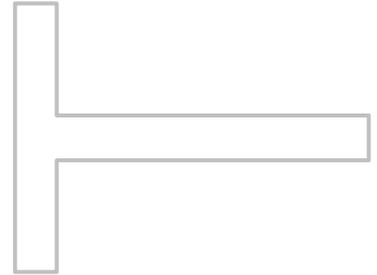
This document is intended to be used in conjunction with AIA Documents A132<sup>™</sup>-2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132<sup>™</sup>-2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132<sup>™</sup>-2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.



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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 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 the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their 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 other Multiple Prime Contractors and by the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

**§ 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 and certify termination of the Agreement under Section 14.2.2.

### § 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.

**§ 1.2.2** 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 will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect, or Architect’s consultants’ reserved rights.

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

### **§ 1.6 Transmission of Data in Digital Form**

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

## **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 Article 4, the Construction Manager and the Architect do 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 Information and Services Required of the Owner**

**§ 2.2.1** Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.2** 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. Unless otherwise provided under the Contract Documents, the Owner, through the Construction Manager, shall secure and pay for the building permit.

**§ 2.2.3** 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.

**§ 2.2.4** 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.

**§ 2.2.5** 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.

**§ 2.2.6** The Owner shall endeavor to forward all communications to the Contractor through the Construction Manager and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents.

### **§ 2.3 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.

### **§ 2.4 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 written 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 deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect, after consultation with the Construction Manager. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## **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 plural term "Multiple Prime Contractors" refers to persons or entities who perform construction under contracts with the Owner that are administered by the Construction Manager. The term does not include the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

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

**§ 3.1.4** The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their 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 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and 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 Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and 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 make 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 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, unless the Contract Documents give other specific instruction concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and 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 written notice to the Owner, the Construction Manager, and the Architect and shall not proceed with that portion of the Work without further written instructions from the Architect, through the Construction Manager. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required 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 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 the Project 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 authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, 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**

The Contractor warrants to the Owner, Construction Manager, 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 with 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 Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **§ 3.6 Taxes**

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof 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 Owner, through the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay 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, Construction Manager, and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect and

Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, 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 an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, 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, Construction Manager, and Contractor in writing, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may proceed 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, Construction Manager, 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 furnish in writing to the Owner and Architect through the Construction Manager, the name and qualifications of a proposed superintendent. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager, or the Architect has reasonable objection to the proposed superintendent or (2) that any of them require additional time to review. Failure of the Construction Manager to reply 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, Construction Manager 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 Schedules**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information and the Construction Manager's approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at

appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project schedule to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Multiple Prime Contractors or the construction or operations of the Owner's own forces.

**§ 3.10.2** The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter update it as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a 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 participate with other Contractors, the Construction Manager and Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

**§ 3.10.4** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager and Architect and incorporated into the approved Project schedule.

### **§ 3.11 Documents and Samples at the Site**

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the Architect and delivered to the Construction Manager 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 the way by which 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 and Construction Manager is subject to the limitations of Sections 4.2.9 through 4.2.11. Informational submittals upon which the Construction Manager and Architect are 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 Construction Manager or Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve and submit to the Construction Manager Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the Project submittal schedule approved by the Construction Manager and Architect, or in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Multiple Prime Contractors or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples and similar submittals with related documents submitted by other Multiple Prime Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner, Construction Manager, 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 reviewed and 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Construction Manager and Architect in writing 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 Construction Manager and Architect on previous submittals. In the absence of such written 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. 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 cause such services or certifications to be provided by a properly 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, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, 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. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### **§ 3.13 Use of Site**

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

**§ 3.13.2** The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

### **§ 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 and patching shall be restored to the condition existing prior to the cutting, fitting and 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's own forces or of other Multiple Prime Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner's own forces or by other Multiple Prime Contractors except with written consent of the Construction Manager, Owner and such other Multiple Prime Contractors; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the other Multiple Prime Contractors or the Owner the Contractor's 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 or 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, or Construction Manager with the Owner's approval, 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, Construction Manager and Architect 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, Construction Manager and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner, Architect, or Construction Manager. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect through the Construction Manager.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and 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 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 AND CONSTRUCTION MANAGER**

### **§ 4.1 General**

**§ 4.1.1** 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.

§ 4.1.2 The Owner shall retain a construction manager lawfully licensed to practice construction management or an entity lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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

§ 4.1.4 If the employment of the Construction Manager or Architect is terminated, the Owner shall employ a successor construction manager or architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

#### § 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and 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. On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner and Construction Manager (1) known deviations from the Contract Documents and from the most recent Project schedule prepared by the Construction Manager, and (2) defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide a staffing plan to include one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner reasonably informed of the progress of the Work, and will report to the Owner and Architect (1) known deviations from the Contract Documents and the most recent Project schedule, and (2) defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Multiple Prime Contractors in accordance with the latest approved Project schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, or charge of, 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, except as provided in Section 3.3.1, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of or be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 **Communications Facilitating Contract Administration.** Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Construction Manager, and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with other Multiple Prime Contractors shall be through the Construction Manager and shall be contemporaneously provided to the Architect if those communications are about matters arising out of or related to the Contract Documents. Communications by and with the Owner's own forces shall be through the Owner.

**§ 4.2.7** The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

**§ 4.2.8** The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents and will notify each other about the rejection. The Construction Manager shall determine in general whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, upon written authorization of the Owner, whether or not such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

**§ 4.2.9** The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data and Samples. Where there are Multiple Prime Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from Contractor and other Multiple Prime Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

**§ 4.2.10** 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. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

**§ 4.2.11** Review of the Contractor's submittals by the Construction Manager and Architect 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 Construction Manager and 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 Construction Manager and Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Construction Manager and Architect, 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.

**§ 4.2.12** The Construction Manager will prepare Change Orders and Construction Change Directives.

**§ 4.2.13** The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7. and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.14** Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples and similar

required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

**§ 4.2.15** The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

**§ 4.2.16** 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

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

**§ 4.2.18** 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 so rendered in good faith.

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

**§ 4.2.20** The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing to the Construction Manager to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request 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 other Multiple Prime Contractors or subcontractors of other Multiple Prime Contractors.

**§ 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 or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Construction Manager for review by the Owner, Construction Manager and Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager or the Architect has reasonable objection to any such proposed person or entity or, (2) that the

Construction Manager, Architect or Owner requires additional time for review. Failure of the Construction Manager, Owner, or Architect to reply 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, Construction Manager 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, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager 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 previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

### **§ 5.3 Subcontractual Relations**

By appropriate agreement, written where legally required for validity, 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 responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager 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 in writing; 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 such 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 OTHER CONTRACTORS

### § 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, which include persons or entities under separate contracts not administered by the Construction Manager, and to award other contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces including persons or entities under separate contracts not administered by the Construction Manager, the Owner shall provide for coordination of such forces with the Work of the Contractor, who shall cooperate with them.

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor 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's own forces, Construction Manager and other Multiple Prime 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's own forces or other Multiple Prime Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Construction Manager and Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's own forces or other Multiple Prime Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a separate contractor or to other Multiple Prime Contractors 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 delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces or other Multiple Prime Contractors.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner, separate contractors, or other Multiple Prime Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and other Multiple Prime Contractors 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, other Multiple Prime 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 Construction Manager, with notice to 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, Construction Manager, Architect and Contractor; a Construction Change Directive requires agreement by the Owner, Construction Manager 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, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

## **§ 7.2 Change Orders**

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect and Contractor, 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 Construction Manager and signed by the Owner, Construction Manager 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 7.3.7.

**§ 7.3.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

**§ 7.3.5** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager and 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.

**§ 7.3.6** 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.

**§ 7.3.7** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the method and 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 Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers compensation insurance;
- .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 related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

**§ 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 Construction Manager and 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 Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The 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 Construction Manager and 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 Construction Manager shall 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 has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order issued through the Construction Manager and shall be binding on the Owner and Contractor.

### **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, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

**§ 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 an act or neglect of the Owner, Owner's own forces, Construction Manager, Architect, any of the other Multiple Prime Contractors or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration, or by other causes that the Architect, based on the recommendation of the Construction Manager, determines may justify delay, then the Contract Time shall be extended by Change Order 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**

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.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a Stipulated Sum or Guaranteed Maximum Price, the Contractor shall submit to the Construction Manager, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. In the event there is one Contractor, the Construction Manager shall forward to the Architect the Contractor's schedule of values. If there are Multiple Prime Contractors responsible for performing different portions of the Project, the Construction Manager shall forward the Multiple Prime Contractors' schedules of values only if requested by the Architect.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager 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. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner, Construction Manager or Architect may require, such as copies of requisitions from Subcontractors and material 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 Construction Manager and 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 material 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, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

**§ 9.4.2** Where there are Multiple Prime Contractors performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives the Multiple Prime Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Multiple Prime Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Multiple Prime Contractors' application with information from similar applications for progress payments from other Multiple Prime Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Multiple Prime Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

**§ 9.4.3** Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

**§ 9.4.4** The Construction Manager's certification of an Application for Payment or, in the case of Multiple Prime Contractors, a Project Application and Certificate for Payment shall be based upon the Construction Manager's evaluation of the Work and the information provided as part of the Application for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information and belief, the Work has progressed to the point indicated and the quality of the Work is in accordance with the Contract Documents. The certification will also constitute a recommendation to the Architect and Owner that the Contractor be paid the amount certified.

**§ 9.4.5** The Architect's issuance of a Certificate for Payment or in the case of Multiple Prime Contractors, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and information provided as part of the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated, that the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified.

**§ 9.4.6** The representations made pursuant to Sections 9.4.4 and 9.4.5 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 Construction Manager or Architect.

**§ 9.4.7** The issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed the Contractor's construction means, methods, techniques,

sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

### **§ 9.5 Decisions to Withhold Certification**

**§ 9.5.1** The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.4 and 9.4.5 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.3. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the 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 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 the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

**§ 9.5.3** If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers 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 Construction Manager and both will reflect such payment on the next Certificate for Payment.

### **§ 9.6 Progress Payments**

**§ 9.6.1** After the Architect has issued a Certificate for Payment or Project 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 Construction Manager and 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 Construction Manager 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 Owner, Construction Manager and Architect 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 material and equipment 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 to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor

Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

**§ 9.6.5** Contractor payments to material and equipment 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 and 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

### **§ 9.7 Failure of Payment**

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's 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 Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager 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 shut-down, 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 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 notify the Construction Manager, and the Contractor and Construction Manager shall jointly 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 list, the Architect, assisted by the Construction Manager, 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 list, which is not sufficiently complete in accordance with the requirements of 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, assisted by the Construction Manager, to determine Substantial Completion.

**§ 9.8.4** When the Architect, assisted by the Construction Manager, determines that the Work or designated portion thereof is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall 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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### **§ 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 as required under Section 11.3.1.5 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 and Construction Manager shall jointly 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 after consultation with the Construction Manager.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Construction Manager, 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 completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager will evaluate the completion of Work of the Contractor and then forward the notice and Application, with the Construction Manager's recommendations, to the Architect who will promptly make such inspection. When the Architect, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project 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 through the Construction Manager (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 and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial 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 and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, 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. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, 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 Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed 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 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 through the Construction Manager 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; or
- .3 terms of special warranties required by the Contract Documents.

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

## **ARTICLE 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. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors.

The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

### **§ 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 or the Contractor's Subcontractors or Sub-subcontractors;
- .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; and
- .4 construction or operations by the Owner or other Contractors.

**§ 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 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 owners and users of adjacent sites and utilities.

**§ 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, 10.2.1.3 and 10.2.1.4 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, 10.2.1.3 and 10.2.1.4, except damage or loss attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any 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, Construction Manager 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, written notice of such 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**

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

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

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their 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 not 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 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 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 indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance 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 indemnify 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 Liability Insurance**

**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.3** Certificates of insurance acceptable to the Owner shall be submitted to the Construction Manager for transmittal to the Owner with a copy to the Architect prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness.

**§ 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Construction Manager, the Construction Manager's consultants, the Owner, the Architect, and the Architect's

consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

### § 11.2 Owner's Liability Insurance

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

### § 11.3 Property Insurance

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

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

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

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

§ 11.3.2 **Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Construction Manager, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 **Loss of Use Insurance.** The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, adjoining 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, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 **Waivers of Subrogation.** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees each of the other, and (2) the Construction Manager, Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as the Owner and Contractor may have to the proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, Owner's separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or distribution of insurance proceeds in accordance with the direction of the arbitrators.

## **§ 11.4 Performance Bond and Payment Bond**

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

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

## **ARTICLE 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 Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their observation 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 which the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or 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, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

### **§ 12.2 Correction of Work**

#### **§ 12.2.1 Before or After Substantial Completion**

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and 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 an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-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 2.4.

**§ 12.2.2.2** The one-year period 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, whether completed or partially completed, of the Owner or separate contractors or other Multiple Prime Contractors 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 except that, 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 such 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 such assignment.

### **§ 13.3 Written Notice**

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity or to an officer of the corporation for which it was intended; or if delivered at or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### **§ 13.4 Rights and Remedies**

**§ 13.4.1** 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.

**§ 13.4.2** No action or failure to act by the Owner, Construction Manager, 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 in writing.

### **§ 13.5 Tests and Inspections**

**§ 13.5.1** 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 Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and

(2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

**§ 13.5.2** If the Construction Manager, Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Construction Manager and 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 Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs except as provided in Section 13.5.3, shall be at the Owner's expense.

**§ 13.5.3** If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 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 Construction Manager's and Architect's services and expenses shall be at the Contractor's expense.

**§ 13.5.4** 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 Construction Manager for transmittal to the Architect.

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

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

### **§ 13.6 Interest**

Payments due and unpaid under the Contract Documents shall bear interest from 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.

### **§ 13.7 Time Limits on Claims**

The Owner and the Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time 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 the Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

## **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 or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, 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 Construction Manager has not certified or 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, 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 promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

**§ 14.1.2** The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, 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' written notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

**§ 14.1.4** If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor 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' written notice to the Owner, Construction Manager and 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 for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the above reasons exist, the Owner, after consultation with the Construction Manager, and upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, 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' written 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 Construction Manager's and 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, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, 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 the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in 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 this 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 written 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 Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### **ARTICLE 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, 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.

**§ 15.1.2 Notice of Claims.** Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Construction Manager and or Architect is not serving as the Initial Decision Maker. Claims by either party must 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 Continuing Contract Performance.** 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. The Construction Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Initial Decision Maker.

**§ 15.1.4 Claims for Additional Cost.** If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.3.

#### **§ 15.1.5 Claims for Additional Time**

**§ 15.1.5.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein 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.

**§ 15.1.5.2** 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.

**§ 15.1.6 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 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### **§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, 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 arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no 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 such 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 and Construction Manager, if the Architect or Construction Manager 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 an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, 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 15.1.6 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 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. 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.

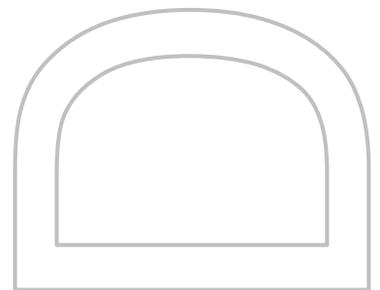
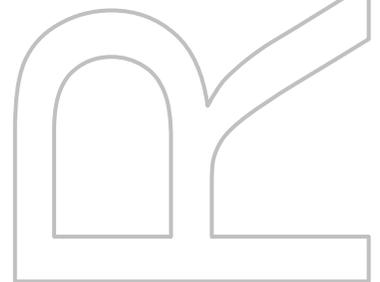
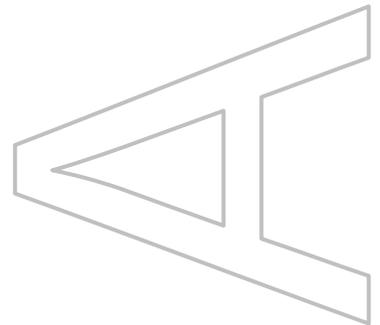
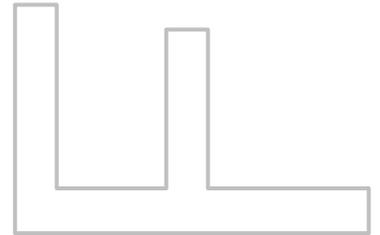
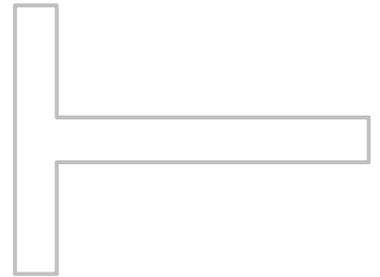
### § 15.4.4 Consolidation or Joinder

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

§ 15.4.4.2 Either party, at its sole discretion, 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 the Owner and Contractor under this Agreement.

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SECTION 00730 – SUPPLEMENTARY GENERAL CONDITIONS TO THE CONTRACT

SUPPLEMENTARY GENERAL CONDITIONS A232-2009

The following supplements modify the “General Conditions of the Contract for Construction,” AIA Document A232-2009. 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
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14. TERMINATION OR SUSPENSION OF THE CONTRACT

**ARTICLE 1: GENERAL PROVISIONS****1.1 BASIC DEFINITIONS****1.1.1 THE CONTRACT DOCUMENTS**

Delete the last sentence 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.”

**1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

Add the following Paragraphs:

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**

Delete Paragraph 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 .”

Delete Paragraph 1.5.2 in its entirety.

**ARTICLE 2: OWNER**

2.1 General

2.1.2 Delete Paragraph 2.1.2 in its entirety.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 Delete the last sentence in this paragraph.

2.2.3 Add the following sentence:

“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.”

2.2.5 Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor may order electronic or hard copies of the Contract Documents from RCI (302-328-5019). Contractor shall be responsible for all reproduction costs, postage and handling.

**ARTICLE 3: CONTRACTOR**

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Delete the third sentence in Paragraph 3.2.4.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Paragraphs:

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 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. 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 Paragraphs:

- 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 General Contractor/Construction Manager 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 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 Paragraphs:

- 3.5.1 The Contractor will warrant all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for one year after Acceptance by the Owner, and will maintain all items in condition that conforms with the Contract Documents during the period of warranty.
- 3.5.2 Non-conforming work during the period of warranty will be corrected by the Contractor at its expense upon demand of the Owner, it being required that the Work conforms to the Contract Documents at the expiration of the warranty period.
- 3.5.3 In addition to the General Warranty there are other warranties required for certain items for different periods of time than the one year 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.
- 3.5.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

### 3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Paragraphs:

- 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 reproducible 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 The Contractor shall provide two (2) prints of the as-built conditions, along with the reproducible drawings themselves, to the Owner and one (1) set to the Architect. In addition, attach one complete set to each of the Operating and Maintenance Instructions/Manuals.

3.17 In the second sentence of the paragraph, insert “indemnify and” between “shall” and “hold”.

#### **ARTICLE 4: ARCHITECT AND CONSTRUCTION MANAGER**

##### 4.1 General

- 4.1.2 Insert “As required by law,” at the beginning of the first sentence.

##### 4.2 Administration of the Contract

Delete the first sentence of Paragraph 4.2.10 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.

Delete the second sentence of Paragraph 4.2.10 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 to Paragraph 4.2.16:

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

Add to Paragraph 4.2.19 “and in compliance with all applicable codes, regulations and ordinances.” to the end of the sentence.

**ARTICLE 5: SUBCONTRACTORS**

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

Delete Paragraph 5.2.3 in its entirety and replace with the following:

- 5.2.3 If the Owner, Architect or Construction Manager has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Architect or Construction Manager has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.

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

6.1 OWNER’S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.3 in its entirety and replace with the following:

“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 Constructor who executes each separate Owner-Contractor Agreement.”

6.2 MUTUAL RESPONSIBILITY

- 6.2.3 In the second sentence, strike the word “shall” and insert the word “may”.

**ARTICLE 7: CHANGES IN THE WORK**

(SEE ARTICLE 7: CHANGES IN WORK IN THE GENERAL REQUIREMENTS)

**ARTICLE 8: TIME**

8.2 PROGRESS AND COMPLETION

Add the following Paragraphs:

- 8.2.1.1 Refer to Specification Section SUMMARY OF WORK for Contract time requirements.
- 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 “arbitration” and insert “remedies at law or in equity”.

Add the following Paragraph:

- 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.

Delete Paragraph 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 Paragraph 8.3.1 shall be the Contractor’s sole remedy in the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay.

Add the following Paragraph:

- 8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive its rights under the Contract.
- 8.3.5 The parties agree that Paragraph 8.3.3 of the Supplementary General Conditions does not apply to the Construction Manager in the event of a delay caused by a party other than the Construction Manager.

## ARTICLE 9: PAYMENTS AND COMPLETION

### 9.2 SCHEDULE OF VALUES

Add the following Paragraphs:

- 9.2.1 The Schedule of Values shall be submitted using AIA Document G732, Continuation Sheet G703.

### 9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

- 9.3.1.3 Application for Payment shall be submitted on AIA Document G732 “Application and Certificate for Payment, Construction Manager as Adviser Edition”, supported by AIA Document G703. Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

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 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

Delete Paragraph 9.6.1 in its entirety and replace with the following:

9.6.1 After the Architect and the Construction Manager have 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.

#### 9.7 FAILURE OF PAYMENT

In first sentence, strike the first reference to "seven" and insert "thirty (30)". Also strike "binding dispute resolution" and insert "remedies at law or in equity".

#### 9.8 SUBSTANTIAL COMPLETION

9.8.5 In the second sentence, strike "shall" and insert "may".

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

#### 10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Paragraphs:

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 Paragraph:

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.

## 10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.3 in its entirety.

Delete Paragraphs 10.3.6 in its entirety.

## ARTICLE 11: INSURANCE AND BONDS

### 11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.4 Strike "the Owner" immediately following "(1)" and strike "and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations."

### 11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety.

### 11.3 PROPERTY INSURANCE

Delete Paragraph 11.3 and its subparagraphs in their entirety and replace with the following:

11.3 The Owner will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their

tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

#### 11.4 PERFORMANCE BOND AND PAYMENT BOND

11.4.1 Add the following sentence: "The bonds will conform to those forms approved by the Office of Management and Budget."

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

#### 12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Paragraph:

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 defective work and that required under contract including any damage to the structure.

12.2.2.2 Strike "one" and insert "two".

12.2.2.3 Strike "one" and insert "two".

12.2.5 In second sentence, strike "one" and insert "two".

### **ARTICLE 13: MISCELLANEOUS PROVISIONS**

#### 13.1 GOVERNING LAW

Strike "except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4."

Insert "except that, if the parties have selected arbitration as the method of dispute resolution, the Delaware Arbitration Act, 10 Del. C. §5701, shall govern Section 15.4."

#### 13.6 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." Insert "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month.

#### 13.7 TIME LIMITS ON CLAIMS

Strike the last sentence.

Add the following Paragraph:

#### 13.8 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

- 13.8.1 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**

#### 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Paragraph 14.4.3 in its entirety and replace with the following:

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

### **ARTICLE 15: CLAIMS AND DISPUTES**

#### 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete Paragraph 15.1.6 and its subparagraphs in their entirety.

#### 15.2 INITIAL DECISION

Delete Paragraph 15.2.5 in its entirety and replace with the following:

- 15.2.5 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 other remedies at law or in equity.

Delete Paragraph 15.2.6 and its subparagraphs in their entirety.

#### 15.3 MEDIATION

- 15.3.1 Strike “binding dispute resolution” and insert “any or all remedies at law or in equity”.
- 15.3.2 In the first sentence, delete “administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement,”. Also strike “binding dispute resolution” and insert “remedies at law and in equity”.

15.4 ARBITRATION

Delete Paragraph 15.4 and its subparagraphs in their entirety.

END OF SECTION 00730

SECTION 00735 – GENERAL REQUIREMENTS

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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, color, sex 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, color, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
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, color, sex 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.

## 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 materiel 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 require, cause judgment 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 non-purchase 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.

## 5.2 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 direct salary plus customary fringe benefits (prevailing wage rates) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.35 times DPE).
- 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 Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the 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 Contractor will be allowed a mark-up not exceeding five percent (5%) on the Subcontractor's 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 Subcontractor's 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. Should I/We be awarded this contract, I/We pledge to complete all the work required in accordance with the project schedule include in specification Section 01780.
- 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, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.
- 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	for each person
	\$1,000,000	for each occurrence
	\$1,000,000	aggregate
Property Damage	\$500,000	for each occurrence
	\$1,000,000	aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

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

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	\$1,000,000	for each person
	\$1,000,000	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 Delaware Archaeological Board 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 in the State Museum.

### 13.5 GLASS REPLACEMENT AND CLEANING

13.5.1 The 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 Contractor shall have all glass cleaned and polished.

### 13.6 WARRANTY

13.6.1 For a period of one (1) year 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 one (1) year, 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, and 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 00735

SECTION 00740 – DELAWARE PREVAILING WAGE RATES & REPORTING FORM

ATTACHMENTS:

1. Delaware Department of Labor Payroll Report Form
2. Delaware Department of Labor Prevailing Wage Rates for Building Construction
  - Included by Reference: The State of Delaware Prevailing Wage Rate Regulations. A copy is available from the Department of Labor by calling 302-761-8200 or online on the State of Delaware's website. Contractors are required to abide by all requirements issued by the State relating to prevailing wage regulations.
  - Contractors are required to submit payroll reports to the Department of Labor. Refer to the State Prevailing Wage regulations and the instructions to bidders Section 00300 Article 4.5.

END OF SECTION 00740

SECTION 00740 - DELAWARE PREVAILING WAGE RATES

STATE OF DELAWARE  
 DEPARTMENT OF LABOR  
 DIVISION OF INDUSTRIAL AFFAIRS  
 OFFICE OF LABOR LAW ENFORCEMENT  
 PHONE: (302) 451-3423

Mailing Address:  
 225 CORPORATE BOULEVARD  
 SUITE 104  
 NEWARK, DE 19702

Located at:  
 225 CORPORATE BOULEVARD  
 SUITE 104  
 NEWARK, DE 19702

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 15, 2013

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	21.87	26.94	39.20
BOILERMAKERS	65.47	33.22	48.83
BRICKLAYERS	46.83	46.83	46.83
CARPENTERS	50.06	50.06	39.82
CEMENT FINISHERS	27.61	29.11	21.20
ELECTRICAL LINE WORKERS	43.49	37.29	28.44
ELECTRICIANS	60.60	60.60	60.60
ELEVATOR CONSTRUCTORS	75.33	40.93	30.55
GLAZIERS	64.10	64.10	54.20
INSULATORS	51.48	51.48	51.48
IRON WORKERS	59.12	59.12	59.12
LABORERS	38.30	38.30	38.30
MILLWRIGHTS	62.18	62.18	48.75
PAINTERS	42.02	42.02	42.02
PILEDRIVERS	67.87	37.64	30.45
PLASTERERS	28.55	28.55	17.50
PLUMBERS/PIPEFITTERS/STEAMFITTERS	59.00	49.26	46.28
POWER EQUIPMENT OPERATORS	57.06	57.06	24.13
ROOFERS-COMPOSITION	21.77	17.96	19.34
ROOFERS-SHINGLE/SLATE/TILE	17.59	17.50	16.45
SHEET METAL WORKERS	62.74	62.74	62.74
SOFT FLOOR LAYERS	45.97	45.97	45.97
SPRINKLER FITTERS	51.75	51.75	51.75
TERRAZZO/MARBLE/TILE FNRS	51.41	51.41	45.45
TERRAZZO/MARBLE/TILE STRS	59.03	59.03	52.63
TRUCK DRIVERS	26.58	23.89	20.03

CERTIFIED: 10/11/13

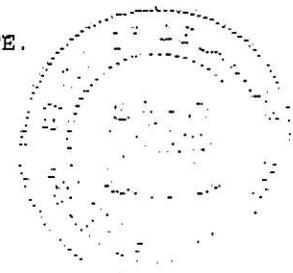
BY: *[Signature]*  
 ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

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) 451-3423.

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

PROJECT: Optical Science Center for Applied Research, Kent County





DATE \_\_\_\_\_

I, \_\_\_\_\_  
(Name of signatory party) (Title)

do hereby state:

1. That I pay or supervise the payment of persons employed by  
\_\_\_\_\_ on the  
(Contractor or Subcontractor)

\_\_\_\_\_  
(public project)

that during the payroll period commencing on the \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_\_\_ and ending on the \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_\_\_ all persons employed on said project

have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of the contractor or subcontractor from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in the prevailing wage regulations of the State of Delaware.

2. That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work performed.

3. That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a state apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, and that the worksite ratio of apprentices to mechanics does not exceed the ratio permitted by the prevailing wage regulations of the State of Delaware.

List only those fringe benefits:

For which the employer has paid; and  
Which have been used to offset the full prevailing wage rate.

(See Delaware Prevailing Wage Regulations for explanation of how hourly value of benefits is to be computed.)

HOURLY COST OF BENEFITS							
(List in same order shown on front of record)							
Employee							
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

I hereby certify that the foregoing information is true and correct to the best of my knowledge and belief. I realize that making a false statement under oath is a crime in State of Delaware

\_\_\_\_\_  
Signature

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

SWORN TO AND SUBSCRIBED BEFORE ME, A NOTARY PUBLIC,

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D. 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public

**An employer who fails to submit sworn payroll information to the Department of Labor weekly shall be subject to fines of \$1,000.00 and \$5,000. for each violation.**

## SECTION 01010 - SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project: Delaware State University Optical Science Center for Applied Research.
- B. Contract Documents, dated October 04, 2013 were prepared for the Project by Richard+Bauer LLC.
- C. The Work will be constructed under multiple prime contracts.
- D. Demolition of existing building structures will be done under separate contract.

#### 1.3 CONTRACTOR USE OF PREMISES

- A. Use of the Site: Limit use of the premises to limits of construction indicated for work in area of the building with minimal disturbance to the surrounding area as required for extension or connection of utilities and surface construction. Do not disturb portions of the site beyond the areas in which the Work is indicated.
  - 1. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, Owner's guests, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

#### 1.4 OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: The Owner will occupy the adjacent site areas, adjacent parking areas, and existing buildings during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01010

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SECTION 01020 – GENERAL SCOPE (REVISED ADDENDUM ③)

All work is to be done in accordance with the Contract Documents, including the drawings and the specifications, this scope of work, and all addenda, if any. Each trade must comply fully with all sections of the Division 01 General Requirements.

This scope is intended as a reference to assist in the bidding process. The Contractor is responsible for all labor, material, tools, equipment, hoisting, storage, layout, incidental work, and associated services necessary to fully complete all of the work described and shown in the Contract Documents. This Contractor is responsible to review and include all items in their attached **specific scope** of work and to also review the work of other trades.

This work includes but is not limited to:

**GENERAL SCOPE ITEMS: ALL trades must abide**

1. All Contractors are responsible for the full set of drawings & specifications, addenda, bulletins, architectural supplemental instruction, etc., herein denoted as “Contract Documents”.
2. Provide a payment and performance bond.
3. Arrange for and coordinate Miss Utility and other applicable entities in the identification and locating of any existing utilities, both public and private as applicable to the work. Test pit by hand digging the locations where new utilities cross over any existing utilities.
4. The Construction Manager will provide two datum points, one grid line in the north-south direction and one grid line in the east-west direction. Provide all other engineering and layout for the work described herein.
5. All Contractors are to provide a full-time onsite superintendent to monitor and supervise work described herein. The project manager assigned to this work is required to visit the site a minimum of two times per week. When the individual is onsite he must meet with Whiting-Turner superintendent and Project Manager. If this Contractor requires any Subcontractors to be onsite, the designated full-time onsite superintendent from this Contractor must be onsite.
6. The project will be **LEED SILVER**; the specifications require certain LEED guidelines, procedures and paperwork be followed. The Contractor is responsible to include all those specific requirements, as called for in the Contract Documents.
7. Reproduction cost for Contract Documents and shop drawings are the responsibility of each Contractor. Copies will not be made by DSU or Construction Manager.
8. All Contractors shall provide Construction Manager with a complete submittal schedule listing all submittals in this Contractor’s scope of work within 10 days of award.
9. Contractors will be required to provide multiple crews and equipment so as to perform work as sequenced on the master project bid schedule.
10. This is a wage rated project. All Contractor employees will be required to sign-in each day on the jobsite.
11. After bids are received, Contractors will need to attend a scope review meeting with Construction Manager, the Owner, and the Architect. Low bidders will be contacted in approx. 1-2 days after bids are due.
12. All Subcontractors must be listed on the bid form. All Subcontractors must be State licensed and insured as well as fully meet specified installer qualifications. If a listed Subcontractor is not used,

- Title 29 Chapter 69 requirements will require Subcontractor to submit a letter of withdraw for review and approval.
13. On-site work hours are 7:00 a.m. to 3:30 p.m. only Monday - Friday. Saturday will be used as a make-up day due to lost time during the week due to weather. This includes deliveries to the site. Below represents special schedule considerations as a result of working on an active University. Bidders shall factor these dates in their bid. Any accelerations or delays as a result of these special schedules will be the sole responsibility of the Contractor.
    - A. ~~Summer hours are from 6:00am to 4:00pm.~~
      - i. ~~2014: May 12th – August 22~~ (Addendum ③)
    - B. Reading Days / Finals – NO EXTERIOR WORK IS ALLOWED
      - i. 2014: May 2 – May 9; December 5 – December 12
      - ii. 2015: May 1 – May 8
    - C. Commencement – NO work starting at noon on Friday through the weekend. The entire site must be cleaned up and presentable.
      - i. 2014: May 9 – May 11
      - ii. 2015: May 8 – May 10
  14. Each Contractor, upon award, is to forward budget costs for each individual item of work, in SF or LF costs for accounting only. A list will be forwarded to each sub from Construction Manager. This list will form the basis of the invoice Schedule of Values. No payments to Subcontractor will be made without first receiving this information.
  15. This Contractor will execute an AIA 132 contract with no changes. This Contractor recognizes that it is a 'Prime' Contractor.
  16. Extra Work – pricing & allowable markups must abide by Contract Documents and the pricing is due within 5 days of request.
  17. This Subcontractors is responsible for all of the existing building and/or site conditions in existence as of the bid due date. These conditions may not be identified on the drawings or in this scope of work. Examine prior to the bid.
  18. Certain Contractors (Site, Masonry and Concrete) will supply their own dumpster for this work; location must be approved by Construction Manager (see specific scope of work).
  19. There will be a tire wash station set up. All vehicles or deliveries will require the driver to hose off all tires to prevent mud or dirt from tracking off the jobsite. Failure to do so will result in the offending Contractor(s) sharing the cost of street cleaning.
  20. Jobsite security and security of materials, equipment, and tools is the responsibility of each Contractor, not Construction Manager. The builder's risk insurance policy does not cover the loss of Contractors' tools or equipment. Store materials off-site or in trailers if there is a security concern. Storage of materials in building/onsite is very limited. Contractors should rent storage trailers as needed. Construction Manager will rent trailers for storage of Owner provided items only.
  21. Where furnishing and installation of work is indicated by separate parties include:
    - a. Furnishing Party – delivery to jobsite including freight and taxes.
    - b. Installing Party – receiving, unloading, inventory, storage, handling, and installation.
  22. The term "GC" shall mean "CM" and the term "General Contractor" shall mean "Construction Manager" wherever it may be stated in the Contract Documents.
  23. The word "provide" shall be defined as furnish and install.
  24. Core drilling, cutting & patching as required to perform work. Include restoration of surfaces to original condition if required. Cutting to be performed as to minimize patching. All core drilling must be first approved by the structural engineer.

25. Each Contractor is responsible for patching of all spray fireproofing removed or damaged in the performance of their work. Failure to patch fireproofing within two (2) working days of notification by Construction Manager will result in a \$150 fine per patch.
26. Sealants, caulking, and fire stopping integral with work. MEP trades must fire stop all penetrations.
27. Permit fees, licenses, testing and inspection required for work other than the building permits are the responsibility of the Contractor. Testing for soil compaction, structural steel and concrete will be performed by Owner's testing agency and Contractors are to provide assistance as necessary. The Owner shall procure the Building Permit. Bidders must procure and pay for any other permits associated with their trade. Please contact City of Dover at 302-736-7010 to verify any costs, etc.
28. All items installed that function are to be officially commissioned, refer to specification sections 01810, 15960, 15970, 16800 and 17000. All MEP trade items will be commissioned by an independent 3<sup>rd</sup> party agency.
29. Temporary lighting, power & water as required for your work. Connection to the Owner's services is permitted, with written permission; however, it must not adversely affect the Owner's functions. Pay to install and remove all temporary services.
30. Scaffolding, lifts, cranes, and other means of hoisting or access for your own work. For bidding purposes, the elevators will not be available to move materials or trash.
31. All Contractors are responsible for all research required for shutdowns and tie-ins prior to submitting a shutdown request to the CM. All associated information must be written on the request form and submitted two (2) weeks in advance of the required shutdown. Upon receipt of approval from the Owner, shutdown/outages shall be performed on premium time between the hours of 6 P.M. and 6 A.M. and/or Saturday or Sunday unless otherwise directed in the field and shall be accomplished as part of the base bid. Outages will not require additional compensation from the CM/Owner. Premium cost for shutdowns or any other off-hour work is the responsibility of the bidder.
32. All utility piping must have ends capped or sealed off until installed and backfilled.
33. When doing utility as-builts, all utility changes in direction or elevation must be shot and converted to a GPS coordinate.
34. Any and all City of Dover water mains exposed during excavation work must be braced per City's requirements to prevent movement or failure.
35. Phasing and remobilization per the master project bid schedule and as required to properly coordinate and complete the work.
36. Field measurements and verification of existing conditions.
37. Temporary weather and dust protection for own work. De-water or muck out all excavations. Water table de-watering is anticipated. Trades doing excavation must review the soil information carefully.
38. Perform any snow removal for access to your work, beyond road areas normally maintained by the Owner.
39. Compliance with local noise restrictions.
40. Temporary sheeting, shoring & bracing as required to perform your work. Engineering calculations/PE certifications if specified.
41. Submittals and mock-ups as specified.
42. All applicable sales, use, gross receipts & excise taxes.

43. Attachment or hangers to other trade's work (floors, trusses, joists, roofing, brick, steel, etc) must abide by structural drawings & manufacture's design / warranty requirements. Violations of this will cause possible replacement costs to this Contractor. Ask prior to bid.
44. Surface preparation and inspection for proper installation of the work. Include clean-up, etching, flash patching, moisture testing, etc. as required per specification and manufacturer's instructions. Commencement of this work shall constitute acceptance of the substrate as suitable for this work.
45. Sleeves, inserts, and anchors for this work.
46. Additional reinforcement/supports for this work which is not detailed on the architectural and structural drawings.
47. Comply with all Construction Manager and Owner Quality Control Program requirements for this work, see Division 01 – Section 01400.
48. Abide by all directions of the Fire Department in matters affecting life safety and fire prevention measures.
49. This Contractor owns salvage rights to all items noted to be removed. However, items must be removed by this Contractor promptly.
50. Parking is not available on site and must be in compliance with Owner requirements. Foremen are responsible to enforce the approved plan.
51. The use of non-specified materials or unapproved materials on the project is not acceptable. Any costs due to the use or replacement of incorrect materials, and the associated impacts to other trades or the project including liquidated damages, will be the responsibility of the Contractors who used the unapproved or incorrect materials.
52. Curtainwall sills must be protected at all times once installed. Contractors must use extreme caution when working around sills.
53. All contractors shall own dewatering for their work. (Addendum ②)

**PROJECT MANAGER'S DUTIES, ETC.**

54. Each project manager is required to have and use an email address that they check at least once per day.
55. The project manager and foreman will need to meet with the superintendent for a "pre-start" job meeting.
56. Attendance of Progress Coordination meetings by your project manager is mandatory. Failure to do so will result in a \$100 fine per occurrence. Meetings may be recorded.
57. All change order pricing must be accompanied by a labor and material breakdown and with Subcontractors/Supplier quotes.
58. Material deliveries need to arrive on site a minimum of 2 weeks before the bid scheduled installation date. Space on site is minimal so coordination of quantities and location either on site or off is critical. Major deliveries will be scheduled for off hours.
59. All deliveries to the site must occur prior to 8 a.m. Site will not have a loading dock therefore all delivery trucks must be equipped with lift gates or Contractor receiving material must utilize other methods of offloading material (i.e.: Lull, forklift, etc.). The CM will NOT accept deliveries without the receiving Contractor on site with adequate manpower and equipment to off load the materials. All deliveries must be fully coordinated and planned. Parcel packages cannot be sent to the CM's jobsite trailer and will be rejected unless receiving Contractor is present to accept the package.
60. Manpower must be supplied to the project at numbers sufficient to meet the bid schedule's simultaneous tasks, speed, sequence, and duration.

### **FOREMEN'S DUTIES, ETC.**

61. The Contractor must have on site, at all times during own work, a supervisor or foreman responsible to coordinate the work with all other trades to meet the project schedule and perform the work to meet the Contract Documents.
62. Language Requirements – All Contractors are to provide at least one bi-lingual crew member for translations if any crew member does not speak English. At a minimum, all Foremen are required to speak English.
63. The foreman will need to meet with the superintendent for a “pre-start” job meeting.
64. Attendance to weekly foreman meetings by the supervisor or foreman is mandatory. Failure to do so will result in a \$100 fine per occurrence. Contractors are required to coordinate with other trades and with Construction Manager.
65. Each day, foreman shall report to Construction Manager jobsite office and check the sub’s clip board or mailbox for written information or direction.
66. Each foreman is required to complete daily field reports and turn them into Construction Manager daily. This report states specifically where and what work was performed.
67. All Contractors employees will meet with Construction Manager’s superintendent for a short safety orientation upon starting their work on site. All Contractors employees are required to attend this orientation.
68. All Contractors are responsible for daily cleanup and broom sweep of their debris to the jobsite dumpster. This means that no trash or left over construction materials can be left on site or in buildings at the end of the day, including scrap metals. Contractors who do not follow this rule will be warned, then back charged, including supervision.
69. Any metal debris must be put in the scrap metal dumpster.
70. At the end of each day, each trade will empty a number of trash barrels, 1 for each 5 men. Construction Manager will supply the barrels. Foreman will assign this task daily.
71. Storage space is limited on the Owner’s property. Materials and gang boxes cannot be in the way of other trades, traffic, fire lanes, Owner functions, access, etc. Review location and requirements with Construction Manager. Provide storage trailers or offsite storage when necessary. Construction Manager will rent trailers for storage of Owner-provided items only.
72. As-built drawings should be maintained on the job-site and updated on a daily basis by this Contractor for review by Construction Manager.
73. Care must be taken to not mark or damage finished surfaces. Temporarily protect the Owner’s property. Contractors will be back-charged or will need to pay for repairs to the work of others. Protect the Owner’s property.
74. The existing DSU facilities cannot be used for construction use without written approval. All deliveries need to be scheduled 2 days in advance.
75. Each foreman shall have a working cell phone and email address to be used for work purposes.

### **INDOOR AIR QUALITY**

76. All Contractors are responsible for daily cleanup and broom sweep of their debris so as to meet the indoor air requirements of the building. Refer to Division 01 – Section 01410 Indoor Air Quality Plan. This means that no trash or left over construction materials can be left on site or in buildings at the end of the day, including scrap metals. Contractors who do not follow this rule will be warned, then back-charged, including supervision.

**SAFETY ITEMS**

77. Hangers on floors, steel, bar joists or roof trusses must comply with requirements of those vendors.
78. Lifts cannot be used on upper building floors that exceed load limits. Review the structural drawings and request clarification from the structural engineer.
79. No gasoline-powered equipment can be used at any time within buildings, use propane instead. All equipment you plan to use must be reviewed with the Superintendent for safety concerns.
80. MSDS must be forwarded prior to starting work. No chemicals can be used at any time without properly reviewing them with Construction Manager first.
81. Contractors are required to comply with all safety regulations as required by OSHA, Construction Manager, Owner and as noted in the specifications. Provide all safety devices necessary for your work including fall protection.
82. All safety, barricades, floor opening protection, etc., installed by this Contractor or by others, is the responsibility of this Contractor if moved or damaged by this Contractor.
83. The successful Contractor must forward Construction Manager a copy of their job specific safety program.
84. During this project, hot work permits will need to be obtained from Construction Manager prior to proceeding with any such work.
85. Work in existing or new manholes will need to abide by Construction Manager and Owner's confined space regulation and requirements.
86. Any and all utility trenches left open overnight will need to have temp fence panels or orange snow fence put around, anywhere, anytime. Contractor shall supply, maintain and remove the panels required for their work.

**INVOICING, COMMISSIONING, CONTRACT CLOSE OUT, ETC.**

87. Commissioning will be performed on all installed equipment and items that function. See your specification sections for individual requirements.
88. Each Contractor must have a line item on their invoice Schedule of Values that allows 3% of the total contract amount for close-out documents (as-builts, warranties, operations and maintenance manuals, punchlists, etc.) in addition to 5% retention.
89. Invoices are due no later than 20<sup>th</sup> of each month.
90. Mobilization values must not exceed industry recognized costs to move materials in or out. The same value must also be listed for Demobilization.
91. Provide all testing, guarantees, warranties, as-built drawings, O&M manuals, commissioning tests, close-out documentation, and start-up services necessary to put all work into first class operating condition per the Contract Documents including any final cleanup required.
92. Furnish attic stock as required by the Contract Documents and/or the specific scope of work.
93. Building or site commissioning is to be performed separately from Owner's training.
94. All warranty periods begin at substantial completion. Refer to the specific Warranty requirement in Section 01820. Extended warranties may need to be purchased to meet this requirement and this cost shall be included in the bid. (Addendum ③)
95. With respect to warranties, if an object or piece of equipment needs to be replaced during the warranty period, once installed, the full warranty period will re-start for that new item.
96. Contractors must submit (6) six complete sets of close-out documents consisting of as-built drawings, electronic drawing files, operation and maintenance manuals, start-up logs, warranty letters, certificates of inspection, Owner's training video and a detailed transmittal of attic stock as

required for all work performed under contract. An electronic copy of these items must also be provided.

97. Owner's Training is required whether or not required by Contract Documents. Training sessions will be video recorded by the Construction Manager
98. Tickets for extra work authorized and directed by the Construction Manager must be submitted and signed by the Construction Manager daily. If tickets are not presented within 24 hours, contractor forfeits right to obtain payment for that work.
99. Certified Payroll must be submitted to the State of Delaware. PDF copies must be emailed to the Construction Manager Monthly to receive payments.

END OF SECTION 01020

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SECTION 01020 – BID PACKAGE 08A – GLASS, GLAZING AND CURTAINWALL (REVISED ADDENDUM 4)

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements and other related documents as indicated herein. The scope of work shall include but not be limited to the following specific scope of work: (All work shall be furnished and installed unless noted otherwise herein.)

**SPECIFICATION SECTIONS**

The Contractor is fully responsible for all of the information contained in all sections of the technical specification manual as it applies to their trade. For specifications listed below as “In Its Entirety”, it is this trades full responsibility for all work included in that section. For sections listed below “As Applicable”, other units of work, as defined by the Scope, may also have some responsibility for that particular section. Bidding Requirements, Contract Requirements and Supplementary Conditions apply to all of the Individual Units of Work.

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>RESPONSIBILITY</b>
DIVISION 00	CONTRACT REQUIREMENTS	IN ITS ENTIRETY
DIVISION 01	GENERAL REQUIREMENTS	IN ITS ENTIRETY
DIVISION 02	SITE CONSTRUCTION	AS APPLICABLE
DIVISION 03	CONCRETE	AS APPLICABLE
DIVISION 04	MASONRY	AS APPLICABLE
DIVISION 05	METALS	AS APPLICABLE
DIVISION 06	WOOD AND PLASTICS	AS APPLICABLE
DIVISION 07	THERMAL AND MOISTURE PROTECTION	AS APPLICABLE
07435	INSULATED METAL PANELS	IN ITS ENTIRETY
07901	JOINT SEALANTS	IN ITS ENTIRETY
DIVISION 08	DOORS AND WINDOWS	AS APPLICABLE
08120	INTERIOR ALUMINUM DOOR FRAMES	IN ITS ENTIRETY
08410	ALUMINUM ENTRANCES AND STOREFRONTS	IN ITS ENTIRETY
08450	ALL GLASS DOORS	IN ITS ENTIRETY
08625	METAL FRAMED SKYLIGHTS	IN ITS ENTIRETY
08710	BUILDERS HARDWARE	AS APPLICABLE
08800	GLAZING	IN ITS ENTIRETY
08840	PLASTIC GLAZING	IN ITS ENTIRETY
08920	CURTAINWALL	IN ITS ENTIRETY
DIVISION 09	FINISHES	AS APPLICABLE
DIVISION 10	SPECIALTIES	AS APPLICABLE
DIVISION 11	EQUIPMENT	AS APPLICABLE
DIVISION 12	FURNISHINGS	AS APPLICABLE
DIVISION 14	CONVEYING SYSTEMS	AS APPLICABLE

DIVISION 15	HEATING, VENTILATION, AIR CONDITIONING, PLUMBING	AS APPLICABLE
DIVISION 16	ELECTRICAL	AS APPLICABLE
DIVISION 17	INSTRUMENTATION AND CONTROL FOR HVAC	AS APPLICABLE
APPENDICES		IN ITS ENTIRETY

### GENERAL ITEMS

1. This Contractor is to review all drawings including Structural, Architectural, Mechanical, Electrical, Plumbing and Fire Protection prior to mobilization to site to identify all items that need to be coordinated with the this scope of work.
2. It is this Contractor's responsibility to coordinate with all work trades affecting this Contractor's work to ensure proper installation of materials.
3. This Contractor is aware that they must take whatever means necessary to meet the project schedule including but not limited to overtime hours, increased manpower, shift work, etc. at no additional cost to the owner.
4. Provide all necessary mobilizations as required to complete this scope of work.

### GLASS, GLAZING AND CURTAINWALL SPECIFIC SCOPE ITEMS

5. Furnish and install all aluminum framing, glass and metal wall panels complete as shown on the mockup sketch (refer to SKA-01 add02). Provide labor, materials, equipment, dumpster and complete removal of the glass and curtainwall from this mockup once approved to be removed by the Construction Manager and Architect. Glass may be re-used in the construction of the building if sized accordingly and is the approved color and finish. Provide water testing the glass and metal panels in the mockup. (Addendum ②)
6. Furnish and install complete all aluminum storefront systems, windows, **interior and exterior** aluminum doors **and frames**, interior aluminum frame window units, window trim, hardware (sensors, mag locks, closers, etc.), pulls, shims, fasteners, accessories and aluminum pieces including but not limited to angles, plates, bent plates and extrusions. Furnish and install all interior glass and glazing, channels (see detail 3/a12.1, note 14, typical), sealants, setting blocks, etc. (Addendum ② ④)
7. All aluminum windows and doors are to be furnished with glazing as specified in the Contract Documents.
8. Provide all required coordination and layout required for interior and exterior aluminum windows. Coordinate with partitions and steel contractors and any other trade as required.
9. This Contractor is responsible for furnishing and installing all glass in aluminum and hollow metal door frames, hollow metal window, hollow metal doors and wood doors including glass for all doors, doorframes, borrow lite frame, butt glazed glass, etc. Including specialty glazing for types such as obscure glass.
10. Furnish and install any necessary steel angles or clips required to attach the curtain wall or storefront systems to the building steel. This shall include anything not shown on the Contract Documents but required for this work.
11. Furnish and install all flashing under windows to ensure a watertight system.
12. This Contractor is responsible for all caulking or sealants integral to the aluminum storefront and/or window systems and caulking to adjacent dissimilar materials. Provide backer rod where required. Caulking between aluminum and metal panels shall be by this Contractor. Provide spray foam insulation between metal panels and curtainwall (details 8 & 12/a11.7 note 30) and at skylight sloped edges (details 1 & 4/a11.7 note 30) (Addendum ③)

13. Provide all pre-finished aluminum materials as specified.
14. Window opening sizes will need to be closely coordinated with the general trades contractor.  
This Contractor will be required to provide the necessary layout and rough opening dimensions prior to work starting by the other trades. The general trades contractor will build the openings based on "hold-to" dimensions provided by this Contractor. No time will be allowed for field measuring openings prior to constructing the windows. (Addendum ②)
15. Furnish and install all aluminum drip edges as indicated or specified.
16. Furnish and install all aluminum stop beads, jamb extensions, sills, stools, in frame insulation, weather stripping, etc. as required to provide a complete and weatherproof window installation.
17. Furnish and install the aluminum finish trim for all systems furnished under this package.
18. Furnish and install all shims, fasteners and clips associated with the new windows to provide a complete and uniform installation of all window units.
19. All wood nailers, window and door blocking will be the responsibility of the general trades contractor. This Contractor is responsible for verifying that all required blocking for this packed has been installed. (Addendum ②)
20. Provide and pay for all hoisting, rigging, scaffolding, shoring, equipment, etc. required to accomplish the work described herein.
21. This Contractor is responsible for all fall protection and safety requirements associated with this work. When working from either lifts and harnesses or tie-offs provided by this Contractor, OSHA standards must be met and followed at all times.
22. Furnish and install all aluminum entrance doors (interior and exterior), including support structure and any integral aluminum wall panel systems.
23. Provide and install all door hardware that is to be installed on the aluminum doors and frames as per the door hardware specifications.
24. Furnish and install all interior and exterior automatic door operators, aluminum bollards, push pads, access panels, etc. Coordinate the installation of the automatic door openings with the electrical contractor to ensure a properly functioning product. This Contractor shall provide the power connection location and all electrical and control wiring beyond the main power supply. Provide access for the electrical contractor to install conduit and wiring to the appropriate location which shall be specifically designated on the shop drawings. See detail 1/a6.2, note 39; a8.0, note 12; details 2/a8.2, note 16; 7/a10.0. (Addendum ②)
25. Provide all testing, balancing and commissioning of automatic doors at time of installation. This Contractor shall include an additional adjustment after all HVAC systems have been tested and balanced to ensure all doors are operating properly.
26. Furnish and install glass backsplash at all locations where indicated. See detail 1/a16.0, note 9, typical. Coordinate with 06A Finish Carpentry contractor as required. (Addendum ②)
27. Provide any supplemental framing that is required to properly support the work described herein but not shown on the Contract Documents or specifically assigned to another contractor.
28. Include the necessary multiple mobilizations to the jobsite to facilitate the work per the project schedule.
29. Furnish and pay for all engineering, testing, calculations, certifications, site visits by manufacturer representatives, etc. if required by the Contract Documents. All engineering and calculations shall be stamped by a professional engineer licensed in the State of Delaware.
30. Coordinate with and make provisions for a security system to be installed by others such as but not limited to reinforcement, raceways, cutouts, etc.
31. Provide protection of own work during installation. After completion of each area, review the area with the CM to ensure area has no damage, sub-standard installations, etc. This is not the official punchlist. Prior to leaving an area of work, the metal frames and glazing shall be cleaned

- by this Contractor. Provide final clean-up of each work area. Install temporary protection on ALL window sills following installation. Protection to consist of 1/8" corrugated plastic held with painters tape to protect factory finish. (Addendum ②)
32. Protect adjacent work from damage by this Contractor.
33. Water test windows as required by the Contract Documents.
34. Furnish and install the skylight in its entirety. This work shall include but not be limited to all flashings (details 1 & 3/a11.7 note 12, typical), counter-flashings, drip edges, anchors, sealants, etc. Coordinate with roofing and carpentry contractors for blocking and flashing details at the curb of the skylight. Provide a water test as required by the Contract Documents. (Addendum ② ③)
- ~~35. Furnish and install all metal insulated panels in the curtainwall system and all insulated and non-insulated metal panels at penthouse and roof screen wall. This Contractor shall own the entire scope of work under Bid Package 07B Metal Panels complete. Refer to details 8 and 12 on a/11.7 (fully glazed system). (Addendum ② ④)~~
36. Furnish and install aluminum plate panel as indicated on SKA-02 add01, note 41. (Addendum ②)
37. Assume one full height section of curtainwall or metal panel to be left out for trash chute and/or material access. Assume remobilization at a later date to complete final installation (anchored/caulked/etc.) at the direction of the CM. (Addendum ②)
38. Provide a competent individual to walk the project at the end of every day while this Contractor is on site. If a life safety issue is discovered, this Contractor must take all required measures to bring the condition to a safe state prior to leaving the site on a daily basis. (Addendum ③)
39. **This Contractor shall provide the caulk joints at the jambs of the metal panels as shown in details 7 and 11/a11.7. The metal panels shall be furnished and installed by the Metal Panels Contractor. (Addendum ④)**

#### **BIM/VDC REQUIREMENTS**

40. This Contractor shall model in 3D, the curtainwall, glass and metal panels for coordination with all MEP, structure, laboratory and architectural trades. This model will be delivered to the CM in accordance with the VDC Execution Plan in Division 01 – Section 01315.
41. Provide an onsite modeler a minimum of two (2) days per week to model this Contractor's work. Model must be complete within six (6) weeks from award of this Contract. Please note the modeler onsite is to help bring coordination with other trades to an expeditious conclusion. This Contractor is still responsible to include whatever it takes to complete a fully coordinated model.
42. This Contractor shall be responsible for modeling of all curtainwall, glass, aluminum/glass doors and metal panels as well as all contents included in this scope of work. Modeled contents shall include but not be limited to:
- Curtainwall members and glass
  - Insulated and non-insulated metal wall panels
  - Aluminum doors
  - Glass and glazing
  - Clips, brackets, support members, accessories, raceways for automatic doors

#### **ALTERNATES**

See Division 01 – Section 01025 for list of alternates that may or may not apply to this scope of work.

~~Alternate No. 9: Provide the deduct for all work as described in Bid Package 07B. If Alternates #8 and #9 are accepted, the Contractor awarded Bid Package 07B will install the metal panel system, but this Contractor shall still provide the caulk joints at the jambs of the metal panels as shown in details 7 and 11/a11.7. (Addendum ② ④)~~

**Alternate No. 12: Provide the deduct cost for all interior aluminum door frames as specified in section 08120 and as noted as type 1 on the door schedule on a2.5 where the frame is noted to be aluminum with a wood door.**

#### **ALLOWANCES**

Add to the base bid price, the following ALLOWANCES. Overhead and profit should not be included on top of these allowances in the base bid cost. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the Contract. Any monies spent against these allowances are to be approved by WT via signed extra work tickets. The allowances can be used for another purpose at the discretion of the CM at any time:

1. Allowance #1 – Include in the bid a lump sum of \$7,500 for the purpose of temporary protection above and beyond what is stated in this scope of work to be used at the direction of the CM. To be paid for T&M using unit prices. (Addendum ②)

END OF SECTION 01020

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SECTION 01020– SUMMARY OF CONTRACTS / SCOPES OF WORK (REVISED ADDENDUM 4)

**Bid Packages:** The following is a list of Bid Packages for the Delaware State University – Optical Science Center for Applied Research:

UNIT OF WORK #	TITLE	BRIEF DESCRIPTION (See Specific Scope for full Description)
01A	General Scope of Work	General Scope of Work Applicable to All Trades
08A	Glass and glazing	Aluminum storefront and curtainwall

**Request for clarifications:** Direct all questions or concerns in writing to:  
The Whiting-Turner Contracting Company, Construction Manager, Attention: Josh George via email:  
Joshua.George@whiting-turner.com.  
All responses will be in the form of an Addendum.

END OF SECTION 01020

(ATTACHMENTS FOLLOW – GENERAL SCOPE AND SPECIFIC SCOPES OF WORK)

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SECTION 01025 – PROJECT ALTERNATES (**REVISED ADDENDUM 4**)

Insert the following alternate prices into the spaces provided on the bid form.

**ALTERNATE No. 1:** This Alternate applies to Bid Packages 06A, 09A, 09E, 12A, 15A and 16A. Fit up of Lab #238 (Khan) as shown on the drawings. (Addendum ② ③)  
Base bid shall consist of the following:

- Gypsum board walls
- Door and hardware as scheduled
- Lay-in ceiling as specified
- Epoxy floor and wall base as specified
- Purchase light fixtures and install minimum required for life safety (others to be stored)
- No raceway; minimum power (wall outlets) as required by code
- Rough-in for door access control
- Stub in lab piping above ceiling and cap inside lab
- Rough-in only for safety shower/floor drain/sink
- Stub in lab plumbing and HVAC piping above ceiling and cap inside lab
- Provide chilled beams for future installation (stored by owner)
- No building automation controls required
- No data rough-in required

**ALTERNATE No. 2:** This Alternate applies to Bid Packages 06A, 09A, 09D and 15A. Casework and sink at lounge #318 as shown on the drawings. (Addendum ②)  
Base bid shall consist of the following:

- No casework
- Painted gypsum wall board
- Rough-in only for sink supply and waste

**ALTERNATE No. 3:** This Alternate applies to Bid Packages 06A, 09A and 09D. Casework at copy alcove at ground floor (Hallway A120) and copy alcove (A217) as shown on the drawings. (Addendum ②)

Base bid shall consist of the following:

- No casework
- Painted gypsum wall board

**ALTERNATE No. 4:** This Alternate only applies to Bid Package 15A. Free cooling module for chiller (as specified). See Mechanical drawings. (Addendum ②)  
Base bid shall consist of the chiller without the free cooling module.

**ALTERNATE No. 5:** This Alternate only applies to Bid Package 15A. Separate HVAC controls for each office as shown on the Mechanical drawings. (Addendum ②)  
Base bid shall consist of the following:

- Pipe and control groups of two (2) offices as one (1) control zone.
- One thermostat, one hot water control valve and one chilled beam water control valve per two (2) offices on levels 1 thru 3.

**ALTERNATE No. 6:** This Alternate only applies to Bid Package 02A. Furnish a temporary SWM pond away from the building pad to allow for general construction activities. See logistics plan provided by the Construction Manager for location. Provide all labor and material to relocate the SWM pond to the permanent location according to the schedule and survey the new SWM pond as soon as it is complete. Expedite this survey as it is a critical path activity. (Addendum ②)

**ALTERNATE No. 7:** This Alternate only applies to Bid Package 02A. Furnish a stabilized construction road over the area delineated by the permanent SWM pond to allow for construction vehicle and lift access close to the south west side of the building. Remove and restore all grades, surfaces and the SWM pond after exterior construction on this side of the building is complete. Maintain full functionality of the SWM pond during this entire period. (Addendum ②)

**ALTERNATE No. 8:** This Alternate only applies to Bid Package 07B. Provide an insulated metal panel system complete. Panels are to be mounted in the curtainwall system and fully caulked. Coordinate with the glass and curtainwall contractor as required to ensure all details are accepted by the manufacturer of the metal panel system and that systems maintain the integrity of the building envelope and provide for adequate water drainage. Maintain all warranties as required by the Contract Documents. This is a caulked system as shown in details 7 and 11/a11.7, but caulking of the panel jambs shall be provided by the Contractor who is awarded Bid Package 08B. (Addendum ②)

**ALTERNATE No. 9:** This Alternate only applies to Bid Package 08A. Provide the deduct cost for all work associated with Bid Package 07B. This shall be based on the fully glazed system as shown in details 8 and 12/a11.7. Should this Alternate be accepted, the Contractor who is awarded Bid Package 08B shall still be required to furnish and install the caulk at the jambs of the panels as described in Alternate No. 8. (Addendum ②)

**ALTERNATE No. 10:** This Alternate only applies to Bid Package 15A. Provide the cost for the CM (assume 2 people from Delaware), the Owner (assume 2 people from Delaware), the architect (assume 1 person from Phoenix, Arizona), Cx Agent (assume 1 person from New Jersey) and engineer (assume 1 person from Philadelphia) for factory witness testing of the air handling unit. This will include travel, lodging and meals. Four (4) weeks' notice will be required. The cost for the each party shall include travel from their home office to the factory where the air handler is being assembled and/or tested. (Addendum ②)

**ALTERNATE No. 11:** This Alternate only applies to Bid Package 02A. Provide the cost to furnish, install and remove asphalt millings for the Laydown Area as shown on the logistics plan. Include 14,250 SF (1,585 SY). Scope shall include proof rolling after removal of top soil, filter fabric and 4" (four inches) of compacted asphalt millings. Note that removal of top soil is part of the base bid of Bid Package 02A. Removal shall occur just prior to final landscaping is to start. (Addendum ③)

**ALTERNATE No. 12: Provide the deduct cost for all interior aluminum door frames as specified in section 08120 and as noted as type 1 on the door schedule on a2.5 where the frame is noted to be aluminum with a wood door. (Addendum 4)**

END OF SECTION 01025

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## SECTION 01035 – MODIFICATION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

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

#### 1.2 MINOR CHANGES IN THE WORK

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

#### 1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Construction Manager will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Construction Manager are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Construction Manager.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

- C. Proposal Request Form: Use AIA Document G709 or approved comparable forms for Proposal Requests.

#### 1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

#### 1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Construction Manager may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01035

SECTION 01040 – PROJECT COORDINATION

**1.01 PROJECT COORDINATION**

- A. Every Contractor shall be responsible for the coordination of the progress of their work with the progress of all other Contractors' work.
- B. Inasmuch as Project completion within the time limit is dependent upon cooperation of those engaged therein, it is imperative that each Contractor perform his work at such time and in such a manner as not to delay or otherwise interfere with work progress of other Contractors. If any Contractor's work depends upon proper execution or results of another Contractor's work, the former shall inspect the work and report any defects therein to the Construction Manager.
- C. Contractors shall afford each other every reasonable opportunity for installation of their work, and shall work in conjunction with each other in order to facilitate proper and intelligent execution of work.
- D. Plans are generally diagrammatic, and each Contractor shall coordinate his work with the work of others, so that interference between mechanical and electrical work and architectural and structural work does not occur. Each Contractor shall furnish and install offsets, bends, turns, and the like in connection with his work to avoid interference with work of other Contractors, to conceal work where required, and to secure necessary clearance and access for operation and maintenance. In case of interference or lack of clearance and access, the Construction Manager will be notified immediately, and shall, in turn, notify the Architect. The Architect will decide which work shall be relocated, regardless of which was installed first.
- E. Systems Coordination Drawings
  - 1. Refer to Division 01 – Section 01315 – Virtual Design & Construction (VDC) Execution Plan for coordination drawing details.

**1.02 FIELD ENGINEERING**

- A. Inspection:
  - 1. Each Contractor shall verify locations of survey control points prior to starting work. Promptly notify Construction Manager of any discrepancies discovered.
  - 2. The Contractor shall verify all measurements of the building and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the drawings; any difference which may be found should be submitted to the Architect for consideration before proceeding with the work.
- B. Survey Requirements: The Construction Manager shall secure a professional engineer

or surveyor licensed in the State of Delaware to perform the following:

1. Verify grades, lines, levels, locations and dimensions as indicated. Report any errors or inconsistencies in the above, before commencing work.
2. Exercise care in laying out work to keep within lot and property lines. Be responsible for encroachments on rights or property of public or surrounding property owners.
3. Locate and layout building or facilities according to the drawings with respect to their location on property and elevation in relation to grade.
4. Provide and maintain well-built batter boards at corners (if applicable). Establish and safeguard benchmarks in at least two (2) widely separated places. As work progresses, establish benchmarks at each level. Give exact levels of various floors.
5. Maintain complete, accurate log of control and survey work as it progresses.

C. Construction Layout:

The Sitework Contractor shall be responsible to perform the layout and elevations required to complete his work.

Each Contractor shall layout the remainder of his own work and be responsible for all lines, levels, grades, elevations, and measurements.

**1.03 TESTS**

- A. The Construction Manager has employed and will pay for the services of a testing agency to perform the following tests and inspection (field):
- Soil compaction
  - Auger Cast Piles
  - Concrete
  - Masonry
  - Steel
  - Cold Formed Framing
- B. Tests, other than those required by the Specifications to be performed by Construction Manager required by any law, ordinance, rule, regulation or order of any public authority having jurisdiction, shall be made at such time and in such manner as the public authority may require. Each Contractor responsible for that Specification Section shall be solely responsible for such tests.
- C. Special tests may be ordered by the Architect in accordance with the General Conditions. Where specifications require testing by an independent testing laboratory, the Construction Manager shall be responsible for selection of the testing laboratory.

The Construction Manager shall be responsible for the scheduling of all tests. Test reports should be given to the Construction Manager with copies for the Owner and Architect/Engineer.

- D. All costs of testing required by the Contract Documents shall be borne by the Contractor except costs of special tests which shall be paid for as stipulated in the General Conditions or Specifications.

#### **1.04 CONTRACTOR'S OBLIGATIONS**

- A. The Contractor must assume all risks and bear any loss occasioned by neglect or accident during the progress of the work until same shall have been completed and accepted by the Owner. The Contractor agrees to indemnify, defend and save harmless the Owner, Architect, and Construction Manager from all suits and losses or injury to persons or property received or sustained from the Contractor or his agents in the performance of the work under the progress of construction and make good all damage that may consequence the work herein specified. He must also assume all blame or loss by reason of neglect or violation of local or state laws, ordinances and regulations, encroachments upon neighbors, or from any other cause.
- B. The work, in every respect, shall be under the care of the Contractor and at his risk. He shall properly safeguard against any or all injury or damage to the public, to any property, materials, or things, except where stipulated otherwise in the Specifications, and also be responsible for any such damage or injury from his undertaking of this work to any person or persons or thing connected therewith. He shall indemnify and save harmless the Owner, Architect, and Construction Manager from all claims, suits, damages, actions of law, in equity or otherwise (including the costs of defense thereof which shall be assumed by the Contractor) or any kind whatsoever in connection with this work and agreement and shall, if required, show evidence of settlement of any such action before final payment is made hereunder by the Owner.

#### **1.05 ALLOCATION OF WORK**

- A. Sleeves, Hangers, and Inserts:
1. Each Contractor shall furnish sleeves and inserts required to accommodate his work, together with instructions regarding their placement and location in the structure. Sleeves and inserts shall be furnished promptly in accordance with the established construction schedule so that they may be built-in as construction progresses.
  2. Contractors to furnish all embeds, sleeves, inserts, etc., that are to be cast in concrete or built in masonry to the appropriate Contractor for installation.
  3. Each Contractor shall furnish and install all hangers required to accommodate his work.
- B. Chases and Recesses:

Each Contractor shall provide all blockouts in his work shown on the Contract Documents and having either or both dimensions greater than 10". Any openings with dimensions smaller than 10" or not shown and required by Contractor shall be the responsibility of the Contractor to make provisions for. Each Contractor shall provide chases and recesses as shown on the Contract Documents required to accommodate the work or the other Contractors. It is the responsibility of the Contractors requiring openings, chases, etc., of a Contractor, to furnish information regarding the size and location promptly in accordance with the established construction schedule, so that they may be built-in as construction progresses and avoid delays. Failure to provide the information promptly will result in the responsible Contractor incurring any costs associated with the delay.

Contractors shall cooperate fully with each other in the performance of above work, as cutting and patching of new work is neither contemplated nor will it be tolerated.

C. Sealing of Penetrations:

Each Contractor shall be responsible to seal his own penetrations in walls, floors, and ceilings, using fire resistant materials, as required, to achieve fire ratings as indicated.

D. Equipment Foundations:

The Concrete Contractor shall provide all foundations and housekeeping pads for equipment furnished under his contract and all interior/exterior foundations and housekeeping pads indicated on the Contract Documents (Architectural, Civil, Structural, Mechanical, Plumbing, and Electrical) for equipment provided by other Contractors. All other foundations, equipment, and housekeeping pads not shown, but required, shall be by the Contractor requiring the same.

Each Contractor shall furnish anchor bolts and other accessories required to anchor his equipment in place, together with instructions regarding their placement and location in the foundation. Anchor bolts and other accessories shall be furnished promptly in accordance with the established construction schedule so that they may be built-in as construction progresses.

E. Roofing Penetrations:

All roofing work shall be performed by the Roofing Contractor, including patching penetrations made by the Electrical, Plumbing, and HVAC Contractors. Cutting of roof openings, structural reinforcement, roof curbs, and counterflashing, shall be provided and installed by each Contractor whose work penetrates the roofing surface, including all additional blocking.

**1.06 CORING, CUTTING AND PATCHING**

- A. Responsibility: A Contractor requiring the cutting of openings in new work, or in the existing work installed by others shall have such openings cut and patched by the trade

which installed the original work, and such cutting and patching shall be at the expense of the Contractor requiring the opening.

B. Approval: Approval to do such cutting and patching shall be received from the Architect through the Construction Manager prior to proceeding with the work.

C. Inspection:

1. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
2. After uncovering, inspect conditions affecting performance of work.

D. Preparation:

Provide supports to assure structural integrity of surroundings, devices, and methods, to protect other portions of Project from damage.

Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

E. Performance:

Execute work by methods to avoid damage to other work and which provide proper surfaces to receive patching and finishing.

Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements and sight-exposed surfaces.

Restore work with new products in accordance with requirements to Contract Documents.

Fit work tightly to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

At penetrations of fire-rated wall, ceiling or floor construction, completely seal voids with fire-resistant materials as required to achieve fire-rating indicated.

Where fire protection materials are damaged or removed, reapply fire protection materials to achieve a rating equivalent to existing construction or as noted.

Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

F. Access Doors and Panels

Access doors and panels, SHOWN ON ANY DRAWING, shall be furnished and installed by the Drywall Contractor.

Access doors and panels, NOT SHOWN ON DRAWINGS, but required by the Specifications to access concealed valves, dampers, traps, devices, etc., shall be furnished by the Contractor requiring the same for installation by the Drywall Contractor.

G. Final Cleaning

Final cleaning shall be performed by Construction Manager. Daily cleaning will be by the Contractor(s) and their Subcontractor(s).

END OF SECTION 01040

## SECTION 01300 - SUBMITTALS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:

1. Contractor's construction schedule.
2. Submittal schedule.
3. Daily construction reports.
4. Shop Drawings.
5. Product Data.
6. Samples.
7. Quality assurance submittals.

- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits.
2. Applications for Payment.
3. Performance and payment bonds.
4. Insurance certificates.
5. List of subcontractors.

- C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports.
2. Division 1 Section "Project Close Out Documentation" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

#### 1.3 DEFINITIONS

- A. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- B. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

#### 1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
  3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
    - a. Allow 2 weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
    - b. If an intermediate submittal is necessary, process the same as the initial submittal.
    - c. Allow 2 weeks for reprocessing each submittal.
    - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Preparation of Initial Submittal and Resubmittals: Submit Shop Drawings in sets consisting of one (1) PDF type electronic file via E-mail or posting to on-line storage drive as determined by the Architect. Each file shall allow noting through Adobe Acrobat or similar computer program. All pages within a certain submittal shall be consistently scaled and shall be of such clarity that the information shall remain legible when scaled up to 200%. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
- C. Submittal Cover Page: Provide a Submittal Cover Page (8-1/2" x 11" format) for each submittal. The Submittal Cover Page shall be of consistent format for each submittal. Prior to first submittal provide template format for review and approval by Architect. Each Submittal Cover Page shall include the following information.
1. Project and Submittal Data.
    - a. Project Name, Location, Address (if applicable)
    - b. Spec. Section Number, Sequence No., Specification Section Title.
    - c. Date.
    - d. Name and address of the Architect.
    - e. Name and address of CM
    - f. Name and address of the Prime Contractor.
    - g. Name and address of the Subcontractor.
    - h. Name and address of the Vendor/Supplier.
    - i. Name of the Manufacturer(s).
    - j. Drawing number and detail references, as appropriate.
  2. Provide a space approximately 4 by 5 inches (100 by 125 mm) on the Submittal Cover Page to record the CM/ Prime Contractor's review and approval markings and the action taken.
  3. Provide a space approximately 4 by 5 inches (100 by 125 mm) on the Submittal Cover Page to record the the Architect's review and approval markings and the action taken.
- D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the CM/Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the CM/Contractor.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
2. Transmittal Form: Use AIA Document G810 or approved equivalent form.

#### 1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 30 days after the date established for "Commencement of the Work."
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."
  2. Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
  3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
  4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
  5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
  6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.
- B. Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
- C. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- D. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- E. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule within seven days of the revision.

#### 1.6 SUBMITTAL SCHEDULE

- A. After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for submittal of the Contractor's Construction Schedule.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.
2. Prepare the schedule in specification section order. Provide the following information:
  - a. Scheduled date for the first submittal.
  - b. Related Section number.
  - c. Submittal category (Shop Drawings, Product Data, or Samples).
  - d. Name of the subcontractor.
  - e. Description of the part of the Work covered.

B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

#### 1.7 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report recording the following information concerning events at the site, and maintain a duplicate copy on site for the exclusive review of the Architect:

1. List of subcontractors at the site.
2. Approximate count of personnel at the site.
3. High and low temperatures, general weather conditions.
4. Accidents and unusual events.
5. Meetings and significant decisions.
6. Stoppages, delays, shortages, and losses.
7. Meter readings and similar recordings.
8. Emergency procedures.
9. Orders and requests of governing authorities.
10. Change Orders received, implemented.
11. Services connected, disconnected.
12. Equipment or system tests and startups.
13. Partial Completions, occupancies.
14. Substantial Completions authorized.

#### 1.8 SHOP DRAWINGS

A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 36 by 48 inches (890 by 1220 mm).

7. Initial Submittal: Submit electronic files in PDF format that is not editable. The Architect will return a notated electronic file in similar format.
8. Final Submittal: Submit electronic files in PDF format that is not editable. The Architect will return a notated electronic file in similar format.
9. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

#### 1.9 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
    - a. Manufacturer's printed recommendations.
    - b. Compliance with trade association standards.
    - c. Compliance with recognized testing agency standards.
    - d. Application of testing agency labels and seals.
    - e. Notation of dimensions verified by field measurement.
    - f. Notation of coordination requirements.
  2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
  3. Preliminary Submittal: Submit electronic files in PDF format that is not editable. The Architect will return a notated electronic file in similar format.
  4. Final Submittals: Submit electronic files in PDF format that is not editable. The Architect will return a notated electronic file in similar format.
    - a. Unless noncompliance with Contract Document provisions is observed and noted as rejected, the submittal may serve as the final submittal.
  5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
    - a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
    - b. Do not permit use of unmarked copies of Product Data in connection with construction.

#### 1.10 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
1. Mount or display Samples in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample if so indicated. Include the following:
    - a. Specification Section number and reference.
    - b. Generic description of the Sample.
    - c. Sample source.

- d. Sub-contractor, supplier, and product name and name of the manufacturer.
  - e. Compliance with recognized standards.
2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least 3 multiple units that show approximate limits of the variations.
    - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
    - c. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
  3. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices.
    - a. The Architect will review and return preliminary submittals with the Architect's notation, indicating selection and other action.
  4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit 3 sets. The Architect will return one set marked with the action taken.
  5. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
    - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
    - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
1. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
    - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.
- 1.11 QUALITY ASSURANCE SUBMITTALS
- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
  - B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

#### 1.12 ARCHITECT'S ACTION

A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken.

1. Final Unrestricted Release: When the Architect marks a submittal "Approved," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.

2. Final-But-Restricted Release: When the Architect marks a submittal "Approved as Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.

3. Returned for Resubmittal: When the Architect marks a submittal "Revise and Resubmit for Record," or "Rejected - Resubmit", do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.

a. Do not use, or allow others to use, submittals marked "Revise and Resubmit for Record" or "Rejected" at the Project Site or elsewhere where Work is in progress.

4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Not Requested."

C. Unsolicited Submittals: The Architect will dispose of unsolicited submittals or shall notify sender of intent to dispose without action taken. Sender may arrange for return of any unsolicited submittals at senders sole cost and expense.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01300

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## SECTION 01305 - SUBSTITUTIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
  - 2. Division 1 Section "Submittals" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.

#### 1.3 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:
  - 1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
  - 2. Revisions to the Contract Documents requested by the Owner or Architect.
  - 3. Specified options of products and construction methods included in the Contract Documents.
  - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

#### 1.4 SUBMITTALS

- A. Substitution Request Submittal:
  - 1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals.
  - 2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
  - 3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
    - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.
    - b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
    - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
    - d. Samples, where applicable or requested.

- e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
  - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
  - g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
  - h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.
- a. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

## PART 2 - PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
1. The specified product or method of construction cannot be provided through no fault of the Contractor within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
  2. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
  3. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  4. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

## PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01305

SECTION 01310

SUBSTITUTION REQUEST FORM

TO: \_\_\_\_\_

PROJECT: \_\_\_\_\_

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Section</u>	<u>Page</u>	<u>Paragraph/Line</u>	<u>Specified Item</u>
----------------	-------------	-----------------------	-----------------------

Proposed Substitution: \_\_\_\_\_

Attached are complete product descriptions, drawings, photographs, performance and test data, and other information necessary for evaluation.

- A. Will changes be required to building design in order to properly install proposed substitution?  
Yes \_\_\_ No \_\_\_ . If Yes, explain: \_\_\_\_\_  
\_\_\_\_\_
- B. Will the undersigned pay for changes to the building design, including engineering and drawing costs, caused by requested substitution? Yes \_\_\_ No \_\_\_.
- C. What differences exist between proposed substitution and specified item?  
\_\_\_\_\_  
\_\_\_\_\_
- D. Does substitution affect Drawing dimensions: Yes \_\_\_ No \_\_\_ . If yes, explain. \_\_\_\_\_  
\_\_\_\_\_
- E. What affect does substitution have on other trades? \_\_\_\_\_  
\_\_\_\_\_
- F. Does Manufacturer's warranty of proposed substitution differ from that specified?  
Yes \_\_\_ No \_\_\_ If yes, explain. \_\_\_\_\_  
\_\_\_\_\_
- G. Will substitution affect progress schedule? Yes \_\_\_ No \_\_\_ . If yes, explain:  
\_\_\_\_\_
- H. Will substitution require more license fees or royalties than specified product?  
Yes \_\_\_ No \_\_\_ . If yes, explain \_\_\_\_\_  
\_\_\_\_\_
- I. Will substitution cost more than specified product?  
Yes \_\_\_ No \_\_\_ If yes, explain how much \_\_\_\_\_  
\_\_\_\_\_
- J. Will maintenance and service parts be locally available for substitution?  
Yes \_\_\_ No \_\_\_ . If no, explain \_\_\_\_\_  
\_\_\_\_\_
- K. Is there any change in the sustainability qualities or LEED points for the proposed product versus the original product?  
Yes \_\_\_ No \_\_\_ . If yes, explain \_\_\_\_\_  
\_\_\_\_\_

Submitted By:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

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

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone

By making this request for substitution, the General Contractor:

1. Represents that the Contractor has investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
2. Represents that the Contractor will provide the same or longer warranty for the substitution that would have been for the originally specified product;
3. Certifies that the cost data presented is complete and includes all related costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
4. Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be completed in all respects.

Submitted By:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Firm

\_\_\_\_\_  
Address

\_\_\_\_\_  
Date

\_\_\_\_\_  
Telephone

For Consultant's Use Only:

Accepted       Accepted As Noted

Not Accepted       Received Too Late

By \_\_\_\_\_

Date \_\_\_\_\_

## SECTION 01315 – VIRTUAL DESIGN & CONSTRUCTION (VDC) PROJECT EXECUTION PLAN

### VDC OVERVIEW

#### 1. Project VDC Mission Statement

- a. What is the purpose of using VDC/BIM?
  - The purpose of using VDC (Virtual Design & Construction) & BIM (Building Information Modeling) on the Delaware State University Optical Science Center for Applied Research is to supplement the collaboration & coordination process between MEP, architectural and structural trades. This will enable all parties to develop a solid understanding of the complexities of the project and assist in resolving potential conflicts early when they are easy to correct. The end product will not only facilitate a smooth and efficient execution of the project in the field, but will also assist in providing an accurate and coordinated set of fabrication and installation documents.
- b. Why is VDC being considered and how will it benefit the project?
  - VDC/BIM are being considered to assist in the coordination process of trades to allow for a better designed and more accessible project space.
  - Give the Owner the best possible product by providing a seamless transition from design through construction and into facilities management (FM).
- c. What is the desired end result?
  - Use clash detection to minimize envelope, structure, architectural and MEP clashes.
  - Visualize the project systems and components in 3D.
  - Perform 3D constructability reviews for complex areas.
  - Minimize field changes. Identify RFI's earlier in the project to reduce cost and schedule impacts.
  - Reduce Construction Administrator (CA) time and improve the quality of RFI's.
  - Improve information available to the project team.
  - Use 3D visualization for virtual mock-up for areas.
  - Increase the prefabrication of materials from the model to increase ease of installation and productivity.
  - Use of model in the field and in Contractor meetings for quality control.
  - Provide a product that is more serviceable by the Owner.
  - Electronic based submittals.
  - Provide an As-Built model to the Owner for their use.
  - Integration of as-built model with FM.

#### 2. Stakeholders VDC capabilities, modeling responsibilities and collaborative roles as it related to the project

- a. Richard + Bauer (Lead Architect), Ballinger (Structural Engineer, MEP/FP Engineer)
  - 2D CAD drawings and coordination/clash detection of all design trades working in Revit.
  - Update and distribute CAD files with drawing changes. (CCB, Addenda, ASI, etc...)
- b. Delaware State University (Owner)
  - Visualization of the final product to allow for design input and better understanding.
  - Provide programming and design input.
  - Provide facility maintenance requirements input during coordination.
- c. Whiting-Turner (Construction Manager)
  - Lead the coordination of trades via Navisworks clash detection. (Acts as model coordinator)
  - Facilitate the management of fabrication models
  - Quality control
  - Logistics (site, trade, etc...)

- d. Subcontractors
  - Creation of fabrication model for shop drawings, clash detection, coordination and prefabrication of materials:
    1. Structure (steel, concrete, miscellaneous metals)
    2. Architectural (curtainwall, metal panels, doors, windows, louvers, partitions, ceilings, carpentry)
    3. Plumbing, Mechanical, Fire Protection, Electrical (MEP)
  - Coordinate with each other and consultants.
  - Assist in clash detection resolution.
3. Special Contractual Documents Between All Parties
  - a. Confidentiality Agreement and Release: Form issued by Richard + Bauer and executed by Whiting-Turner and all subcontractors utilizing the model
  - b. VDC/BIM Addenda: All drawing changes are to be issued to Whiting-Turner with model updates.
  - c. Modeling Scopes of Work: The subcontractors listed in 2.d. have terms in their specific and general scopes of work requiring modeling responsibilities, scope of modeling, durations and coordinating with other trades using the model.
  - d. No specific contract requirements for use of the model exist between the Owner and Construction Manager.
4. Scheduling Constraints for the Project
  - a. Subcontractors are responsible to fulfill the BIM/VDC requirements including project coordination within a timely manner dictated by the project schedule.
  - b. Refer to the project schedule for durations and milestones. The BIM coordination process must be complete and signed off by all parties prior to starting work in the field. Certain trades such as auger cast piles, concrete and steel shall start prior to a fully completed model.

#### COLLABORATION/COORDINATION GUIDELINES

1. Creating the Information Models
  - a. A modeling matrix has been created to define the responsibilities of each team member.
  - b. The model will be divided into floors due to file sizes and reviewing purposes.
2. Process Overview
  - a. A dedicated FTP site (box.com) will be established for uploading the 3D models produced by the designers and subcontractors. These models will be accessible to all parties for individual coordination purposes on a trade by trade basis. Whiting-Turner will be responsible for maintaining and integrating all of the trades' 3D models into a single consolidated master model (Construction Model). This master model will be available to all parties for review in the form of a \*.nwd (Navisworks Document). The master model will be updated weekly (or more frequent if necessary) and available for download from the FTP site.
  - b. Each party will have a distribution list of participants and must notify all participants every time a new file is uploaded to the FTP site. Whiting-Turner will do the same when posting the consolidated 3D model. Do not rely on notifications produced by Box.com.
  - c. Prior to all coordination meetings, each and every Contractor shall ensure that there are no self-intersections within the given model. If self-intersections occur, the given Contractor is subject to back charges.
  - d. Whiting-Turner will review the consolidated master model and the saved views in the coordination meeting with the detailers and subcontractors who will be expected to discuss and resolve the identified problems and adjust their 3D models accordingly. These revised models will be uploaded to a central server and be integrated into the consolidated Navisworks file. Another series of clash detection will be ran and the process will be reiterated for the duration of

the coordination session which can be expected to run for six to eight hours. Any unresolvable clashes will be noted and translated into an RFI by the Contractor or a decision will be made as to what action should be taken and by whom. A supplementary Navisworks file (\*.nwd) will be saved and posted with the date of that meeting in a separate "meetings" folder in the 3D Navisworks Coordination folder. Detailers are expected to bring a laptop computer (or desktop if necessary), with the appropriate 3D modeling software, to the coordination meetings. This will allow changes to be made to the model during the coordination meetings. Coordination meetings will take place on a twice a week basis or as needed.

- e. The integrated master BIM model will be provided in a Navisworks (\*.nwd) file format and will include view sets of clashes and/or other design/construability issues that Whiting-Turner uncovers during this process. The individual team members will be responsible for reviewing the saved views one by one prior to the next coordination meeting. Note: all trades are responsible for reviewing of the models for areas of the building/model including clashes/conflicts not identified by the model manager. Any clashes not identified by the model manager are the direct responsibility of the trades involved and must be addressed prior to signoff of the area.
  - f. Whiting-Turner will establish a modeling insertion point (0,0,0 origin) for incorporation into the Navisworks file. This will provide the viewer with a quick point of reference when navigating through the model.
  - g. All team members must have at their disposal one copy of the latest version of Navisworks Freedom (2013).
  - h. Meetings are intended to be in person, but may be arranged via GoToMeeting if considered more efficient by WT. Designers/modelers must be available to be called upon outside of meetings to answer specific questions regarding the design/coordination when necessary. Many issues can be resolved in this way without the necessity of generating RFI's. Occasionally, one or more of the designers may be requested to be present at a coordination meeting where their input and interaction with the detailers can result in the most practical solution to a given issue.
  - i. This project will require modelers to be "on site" a minimum of twice a week for the modeling and coordination process. Refer to each Contractor's specific scope for model submission deadlines. On site refers to the WT jobsite office. Space will be available for each modeler and their workstation/laptop. Electric and data connections will also be provided. Parking and other provisions are the responsibility of each Contractor.
    1. On site meetings and work sessions are intended for interaction between modelers to create a real-time coordination process. This will require changes to be made on the spot which will require a modeling-capable computer to be provided by each Contractor.
  - j. Any outstanding clashes at the end of the coordination session should be rectified and resulting corrected models uploaded during the course of the ensuing week.
  - k. This process will be repeated until all parties have confidence in the constructability of the coordinated construction model (sign-off). Refer to section 11 of this document for signoff procedures.
3. Requirements for 3D models, Formats and Model Structures
- a. File format: All files should be exported to 3D \*.dwg format. Object enablers for trade specific software should be uploaded to the FTP site in the folder provided if necessary.
  - b. 3D solids: All objects must be modeled as 3D solids, not wire frames or lines.
  - c. Layer names: Layer names should reflect the nature of the group of objects that the layer includes, such as walls, beams, etc. and as a subset more specific descriptors such as wall type, beam type, etc.
  - d. Trade colors: Each trade will be identifiable by a single color within Navisworks with the exception of architectural and structural elements as follows:
    1. Structural concrete: gray
    2. Structural steel: maroon

3. Architectural walls: beige
  4. Skin: blue
  5. Ceilings: orange
  6. Fire protection: red
  7. Plumbing: magenta
  8. Process Piping: yellow
  9. HVAC Duct: light green (supply), pink (return)
  10. HVAC Pipe: green
  11. Electrical: cyan
- e. Common Reference Point: Once established, every trade must use the same reference point or global coordinate system sharing the same 0,0,0. A reference point identifier will be distributed to all detailers/3D modelers and these should be incorporated into and saved with the 3D model when uploading to the FTP site.
1. For this project, the modeling insertion point is located at the project coordinate of column lines **5, h** and elevation **30'-0"** therefore **[0,0,0] = [5,h,30'0"] = [x,y,z]**
- f. Elevations: All elements must be modeled at the correct elevation so that when all of the levels are composited together, every trade will be at the correct elevation relative to project 0 which will be the finish floor elevation of the first floor.
- g. "Clean" models – no x-refs: The 3D \*.dwg model submitted should only contain relevant 3D data and no extraneous 2D data, nor should it contain any x-referenced files.
- h. Self-intersecting models: With reference specifically to the MEP trades. Each trade should check their model carefully for self-intersecting elements and should rectify their model, should they occur.
- i. Filenames: The following filename convention will apply to all trade models:
1. TRADE\_FLOOR\_YYMMDD\_PROJECT
  2. Examples:
    - i. ARC\_1FL\_130508\_OSCAR.dwg
    - ii. STL\_2FL\_130508\_OSCAR.dwg
    - iii. ELC\_PENT\_130508\_OSCAR.dwg
    - iv. CONC\_1FL\_130508\_OSCAR.dwg
- j. Filenames: The following filename convention will apply to Navisworks coordination files:
1. COORD\_FLOOR\_YYMMDD\_PROJECT
  2. Examples:
    - i. COORD\_1FL\_130508\_OSCAR.nwd
    - ii. COORD\_2FL\_130508\_OSCAR.nwd
    - iii. COORD\_PENT\_130508\_OSCAR.nwd
4. Model Communication of Information and Collaboration Process (Model Progression Schedule)
- a. Building Structure Sequence:
1. The modeling and coordination sequence shall run in the same order of precedence as the actual construction and typical 2D submittal review process.
    - i. The structural modeling will begin with the footings and slab-on-grade concrete moving bottom to top. Steel and studs will be modeled in the same manner. Upon completion of both concrete and steel, footing alignment will be reviewed and anchor bolts, base plates and embed will be laid out. The structural steel Contractor will then model the remaining steel and studs under these contracts and provide to WT. The steel and concrete models will be overlaid to ensure proper locations and sizes. The steel model will be submitted to the engineer for review.
    - ii. During the shop drawing/detailing process, each Contractor is to provide weekly models for overlay for comparing information. Once the steel and concrete structure models are significantly complete, WT will then forward

these models to the other trades for overlay and clash detection of their work. WT will then hold a series of coordination meetings that will overlay the Shop Drawing Models for all of the Contractors involved: Steel, MEP, Architectural.

- b. Mechanical/Electrical/Plumbing:
  - 1. The MEP Contractors will all participate in a twice a week computer generated coordination drawing meeting to identify and resolve all interfaces between trades. The baseline model for this coordination is to be the result of the structure model referred to above along with the provided "design-intent" model from the design team. It is expected that detailers attend all meetings and be prepared to make revisions and updates at the meeting with their laptop/desktop computers connected to the project network. Between meetings, the detailers are required to work on detailing and resolving identified clashes.
  - 2. The initial focus for the electrical plumbing Contractors shall be in-slab and below-slab routing of the first floor area.
- c. Interiors:
  - 1. Contractors will participate in the MEP Coordination meeting onsite. MEP trades will have already begun coordination of the building.
    - i. At this time, drywall and carpentry Contractors will be on board to participate in the interior coordination. Drywall/carpentry Contractors will produce 3D modeling illustrating the interior partitions, ceilings and doors. Drywall/carpentry Contractors will establish their baseline model from the most current version at this time. The interior flow will be dictated by WT upon the start of coordination.
- d. Example Progression for HVAC Duct:
  - 1. **Conceptual** – No need to model ducts.
  - 2. **Approximate Geometry** – 2D layout duct with approximate locations (by design team). Partial 3D duct layout in mechanical rooms, shafts and main trunk lines by the design team.
  - 3. **Precise Geometry** – Design and fabrication model of 3D duct with precise engineered dimensions (by Contractor).
  - 4. **Fabrication** – Fabrication model of a 3D duct with precise engineered dimensions and fabrication details (by Contractor).
  - 5. **100% Coordinated** – A 3D representation of the installed duct (by Contractor, fabrication model).
  - 6. **As-Built** – The complete 100% coordinated model after all modifications have been made. All data and attributes are to be present in this as-built file.

## 5. Level of Detail

- a. Objects intended to be modeled by each trade are identified in each specific scope of work. In general, the level of detail to be modeled by each trade shall be as follows.
  - 1. Concrete
    - i. Include accurate dimensions of all cast-in-place concrete including footings, walls, slab-on-grade, elevator jack hole, etc.
  - 2. Structural Steel
    - i. Include exact steel dimensions including thickness, connection points, embed layouts/dimensions, etc.
    - ii. Elevator support steel and rails
  - 3. Miscellaneous Metals
    - i. Include exact dimensions including thickness, connection points, embed layouts/dimensions, etc. Include locations of blocking requirements where applicable.
  - 4. Curtainwall/Metal Panels

- i. Include accurate dimensions for all new doors, curtain wall, windows, louvers and metal panels. Include dimensions required for structural clips, shimming and proper installation.
5. Interior Studs & Drywall
  - i. Include accurate dimensions including wall thickness, height, openings, etc. Studs within walls are not required.
  - ii. Include accurate dimensions for all doors including door location, size, swing, etc. Include blocking requirements in the model.
  - iii. Walls shall depict elevator hoist way
6. Acoustical Ceiling Tiles
  - i. Include proper elevation, size, orientation and layout of ceiling grid as well as other ceiling systems. Show access doors laid out by other Contractors.
7. Mechanical
  - i. Piping – All mechanical piping shall be modeled to provide a complete system as conveyed in the Contract Documents. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. All pipe, flanges, pipe supports, strainers, valves, insulation, hangers, etc. shall be modeled to the utmost accuracy. All mechanical connections to equipment must be shown.
  - ii. Plumbing – All plumbing including domestic water, sanitary/sewer, storm, etc. shall be shown to provide a complete system as conveyed in the Contract Documents. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. All pipe, tees, cleanouts, valves, insulation, hangers, etc. shall be modeled to the utmost accuracy.
  - iii. Ductwork – All ductwork shall be shown to provide a complete system as conveyed in the Contract Documents. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. All ductwork, tees, vents/diffusers, valves, insulation, hangers, etc. shall be modeled to the utmost accuracy.
  - iv. Equipment – All equipment to be installed under this contract shall be accurately inserted in the model. It is preferred that this Contractor contact the manufacturer for a model of the exact piece of equipment. If a model is not available, this Contractor shall model the equipment accurately showing the important parts including access, connection points, etc.
  - v. Access – All access required for normal operation and maintenance shall be modeled as such by this Contractor. These access objects will be set to transparent in the model for aesthetic reasons.
8. Fire Protection
  - i. Piping – All sprinkler piping shall be shown to provide a complete system as conveyed in the Contract Documents. The modeling requirements listed under this section are in addition to any requirements needed for the local and state fire marshal and permit review. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. All pipe, pipe supports, valves, hangers, etc. shall be modeled to the utmost accuracy.
  - ii. Equipment – All equipment to be installed under this contract shall be accurately inserted in the model. It is preferred that this Contractor contact the manufacturer for a model of the exact piece of equipment. If a model is not available, this Contractor shall model the equipment accurately showing the important parts including access, connection points, etc.
  - iii. Access – All access required for normal operation and maintenance shall be modeled as such by this Contractor. These access objects will be set to transparent in the model for aesthetic reasons.

9. Controls

- i. Raceways – All raceways one (1) inch and larger shall be shown by this Contractor. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. Include any and all pull boxes required for this work. If a group of conduits equals two (2) inches or larger, it should be depicted on the model. This Contractor must also realize that field ran utilities that are not shown on the model must be shown so that a conflict in the field is not caused.
  - a. Equipment – All equipment/switches/gear to be installed under this contract shall be accurately inserted in the model. It is preferred that this Contractor contact the manufacturer for a model of the exact piece of equipment. If a model is not available, this Contractor shall model the equipment accurately showing the important parts including access, connection points, etc.
  - b. Access – All access required for normal operation and maintenance shall be modeled as such by this Contractor. These access objects will be set to transparent in the model for aesthetic reasons.

ii. Electrical

- a. Raceways – All raceways one (1) inch and larger shall be shown by this Contractor. The parts and pieces shall be modeled to scale and orientation as this will reflect how the end product will be installed. Include any and all pull boxes required for this work. All cable tray shall be modeled including hangers. If a group of conduits equals two (2) inches or larger, it should be depicted on the model. This Contractor must also realize that field ran utilities that are not shown on the model must be shown so that a conflict in the field is not caused.
- b. Lighting – All lighting shall be shown by this Contractor accurate with size, location and orientation.
- c. Equipment – All equipment/switches/gear to be installed under this contract shall be accurately inserted in the model. It is preferred that this Contractor contact the manufacturer for a model of the exact piece of equipment. If a model is not available, this Contractor shall model the equipment accurately showing the important parts including access, connection points, etc.
- d. Access – All access required for normal operation and maintenance shall be modeled as such by this Contractor. These access objects will be set to transparent in the model for aesthetic reasons.

6. Information Models

- a. All equipment has asset data that must be compiled, tracked and transmitted for model turnover. WT will provide a list of required equipment and fields to be populated by the installing Contractor. Assume that all functioning equipment that will require maintenance will be included in this list.

7. Deliverables

- a. Provide all electronic AutoCAD files of models, including libraries and families.
- b. Provide electronic files that have been converted from AutoCAD into Revit for incorporation into a Navisworks format.
- c. The Modeler hereby grants the CM a perpetual, fully paid license to use the models produced by this Execution Plan. This use may be done without acknowledgement of the Modeler and in any manner deemed desirable by the CM in connection with its business.

- d. The DGN, DWG, PDF, TIF, RVT files, shop drawings, RFI's as-built drawings, etc. (collectively "Project Information") provided to the Modeler are the property of the CM. The Modeler agrees it will keep all Project Information in strict confidence and will not use on any other project or for any other reason not required to complete the Modeler's scope of services on this project. The Modeler further agrees it will not disseminate the Project Information to anyone except the Modeler's own personnel with a need to know and will return all Project Information to the Contractor when services requiring the Project Information are complete.

## 8. Software and Hardware Exchange Information

- a. Whiting-Turner
  1. 2013 Revit Architecture & MEP: 3D Model Design & Drafting
  2. 2013 Navisworks Manage: 3D Viewing & clash Detection
  3. 2013 Navisworks Freedom: 3D Viewing
  4. DWG TruView: 3D \*.DWG Viewer
  5. Google Sketchup
- b. Concrete
  1. TBD
- c. Structural Steel
  1. TBD
- d. Miscellaneous Metals
  1. TBD
- e. Curtainwall/Metal Panels
  1. TBD
- f. Interiors
  1. TBD
- g. Fire Protection
  1. TBD
- h. Plumbing
  1. TBD
- i. HVAC
  1. TBD
- j. Electrical
  1. TBD

## 9. Model Progression Schedule

- a. The creation and coordination by each Contractor shall begin within two weeks of Whiting-Turner issuing a signed contract to that Contractor.
- b. Integration of the system components will occur on a floor by floor basis once the Contractor drawings are complete for that particular floor.
- c. All detailers/draftsmen/coordinators must be involved in this project full-time for a minimum of one (1) month for the project (or more if required in the specific scope of work) or until full coordination is complete. This includes signoff by all associated Contractors and Whiting-Turner and submission to the design team for review. Final coordination completion is at the discretion of Whiting-Turner.

## 10. Model Management

- a. While Whiting-Turner will host the FTP site to contain all information, each Contractor will be responsible for uploading and maintaining their own files on the FTP site. Files from each Contractor will be segregated in different folders on the FTP site. The composite model will also be held in a separate folder and available for all parties to view. No Contractor shall edit or alter another Contractor's information in any way.

#### 11. System Model Coordination Sign-Off Procedures

- a. Once all information for a specific area has been integrated into a composite model and all clashes and coordination issues have been resolved and agreed upon by all parties, a sign-off drawing is produced. The sign-off drawing will be produced by a designated Contractor. This will consist of a set of 2D electronic drawings including all trades' drawings overlaid at once. The Contractor responsible for producing these sign-off drawings will also be responsible for making hard copies, in color, for signoff of all parties involved for submission to the design team. The Contractor responsible for producing the sign-off drawings shall, in advance, produce a sample layout for each area that cuts the areas at an appropriate place while utilizing a scale that will allow for proper review of the drawings. If in agreement, all involved parties will sign the hard copies of the drawings which will then be stored in the Construction Manager's office for record purposes. Once an area has been signed off and approved, each trade will be responsible for creating their own trade-specific drawing to be used for fabrication and installation. All fabrication/shop/installation drawings must be produced from each trade's model. Do NOT create the model from 2D shop drawings.

#### 12. Field Enforcement

- a. It is the sole responsibility of each Contractor to ensure that the coordinated and approved routing is followed in strict accordance in field installation. This includes dimensional accuracy from column lines for installed work. If any material is installed in the field prior to coordination sign-off, it is at the sole risk of the installing Contractor and is subject to removal and reinstallation if deemed necessary by Whiting-Turner. Any costs associated with rework (by this trade or another's) for neglecting to follow this directive including Whiting-Turner costs will be absorbed by this Contractor.

END OF SECTION 01315

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## SECTION 01400 - QUALITY CONTROL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality-control services.
- B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
  - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- E. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section "Submittals" specifies requirements for development of a schedule of required tests and inspections.

#### 1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum and shall be paid by the Contractor.
  - 1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will engage the services of a qualified independent testing agency to perform those services. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders.
    - a. Where the Owner has engaged a testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.
- B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements.

1. The cost of retesting construction, revised or replaced due to failure of initial testing, is the responsibility of the party who performed the original construction work where required tests performed on original construction indicated noncompliance with Contract Document requirements.
- C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
  1. Provide access to the Work.
  2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
  3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
  4. Provide facilities for storage and curing of test samples.
  5. Deliver samples to testing laboratories.
  6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
  7. Provide security and protection of samples and test equipment at the Project Site.
- D. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
  1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

#### 1.4 SUBMITTALS

- A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.
  1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
  2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
    - a. Date of issue.
    - b. Project title and number.
    - c. Name, address, and telephone number of testing agency.
    - d. Dates and locations of samples and tests or inspections.
    - e. Names of individuals making the inspection or test.
    - f. Designation of the Work and test method.
    - g. Identification of product and Specification Section.
    - h. Complete inspection or test data.
    - i. Test results and an interpretation of test results.
    - j. Ambient conditions at the time of sample taking and testing.
    - k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
    - l. Name and signature of laboratory inspector.
    - m. Recommendations on retesting.

#### 1.5 QUALITY ASSURANCE

- A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.
- C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 01400

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SECTION 01410 – INDOOR AIR QUALITY PLAN

TABLE OF CONTENTS

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2. POTENTIAL SOURCES OF ODOR AND DUST
3. AFFECTED AREAS
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5. CLASSIFICATION OF IAQ PROBLEMS
6. CONTROL MEASURES
  - a. HVAC PROTECTION
  - b. SOURCE CONTROL
  - c. PATHWAY INTERRUPTION
  - d. HOUSEKEEPING
  - e. SCHEDULING

## 1. OVERVIEW

This Indoor Air Quality (IAQ) Management plan is to be followed by all Contractors and jobsite personnel during the construction of the Delaware State University – Optical Science Center for Applied Research.

By effectively administering this IAQ Management Plan, we intend to prevent the development of IAQ problems in the building and contribute to the comfort and well-being of the building occupants.

The plan outlines the type of pollutants that may be found on the project, areas of the project that may be affected and the activities that are likely to produce these pollutants. The plan also contains the required measures of the IAQ.

The CM will monitor, implement and document this plan throughout the construction of this project. To comply with the LEED photographic documentation requirement, the CM will take many pictures on multiple occasions to monitor the IAQ effort.

## 2. POTENTIAL SOURCES OF ODOR AND DUST

SOURCE	TYPE
Pressure wood products	VOCs
Treated wood products	VOCs
Adhesives	VOCs
Sealants	VOCs
Glazing compounds	VOCs
Caulking	VOCs
Grouting	VOCs
Wood preservatives, finishes and paint	VOCs
Control and/or expansion joint fillers	VOCs
All hard finishes requiring adhesive installation	VOCs
Wall coverings	VOCs
Solvents	VOCs
Fuels	VOCs
Cleaning agents	VOCs
Pesticides	VOCs
Epoxy flooring/finishes	Particulates, VOCs
Gypsum board and associated finish processes	Particulates, VOCs
Concrete	Particulates
Plaster	Particulates
Roofing	Particulates
Insulation	Particulates
Carpeting	Particulates
Other flooring	Particulates
Ductwork	Particulates
Ceiling panels	Particulates
Automotive Exhaust	Combustion Products

Generators	Combustion Products
Saws	Combustion Products
Compressors	Combustion Products
Welders	Combustion Products
Forklifts	Combustion Products
Troweling Machines	Combustion Products
Conveyors	Combustion Products
Pressure washers	Combustion Products
Mixers	Combustion Products
Cutting torches	Combustion Products
Portable heaters	Combustion Products
Soldering guns	Combustion Products
Cigarette smoke	Combustion Products
Moisture, water	Combustion Products
Bathrooms	Combustion Products
Food products	Combustion Products

### 3. AFFECTED AREAS

Once the new construction begins for the Optical Science Center for Applied Research, all areas of the building will be potentially affected by contaminants and therefore subject to this program. In addition, the surrounding areas could possibly be exposed to various contaminants due to the construction. Control measures are described in Section 6.

### 4. ACTIVITIES LIKELY TO PRODUCE ODOR OR DUST

- a. Many activities during the construction are likely to produce odor and dust. Dust is produced during the following activities:
  - i. Cutting materials
  - ii. Drilling materials
  - iii. Sawing materials
  - iv. Sanding materials
- b. Odors are potentially emitted during any activity, which involves the following products:
  - i. Adhesives
  - ii. Sealants
  - iii. Paints
  - iv. Solvents
  - v. Cleaning supplies
- c. The following construction activities produce combustion products:
  - i. Welding
  - ii. Cutting using torches
  - iii. Sawing using chainsaws
  - iv. Soldering
- d. Additionally, every day activities such as smoking, eating or using the bathroom facilities can produce particulates and odor. Designated areas for eating will be

clearly marked throughout the project and workers' bathroom facilities will be designated as well. There is absolutely no smoking on the campus. The requirement to perform these functions in the designated areas will be stressed at each Contractor meeting and violations will be issued to anyone not complying.

## 5. CLASSIFICATION OF IAQ PROBLEMS

### a. Class 1

Class 1 air pollutants are expected to have only a nuisance impact on exposed occupants. Only very sensitive individuals should have adverse reactions to these pollutants. Activities that produce small amounts of dust and light dust disturbance, such as sweeping, are classified as Class 1.

### b. Class 2

Class 2 air pollutants could cause moderate but temporary health impacts on some occupants. The majority of the activities listed in "Section 4 – Activities Likely to Produce Odor or Dust" produce pollutants that are classified as Class 2.

### c. Class 3

Class 3 air pollutants are the more hazardous air pollutants that could cause severe, acute or chronic illness. The following activities and pollutants are classified as Class 3:

1. Disturbance of products of combustion
2. Application of enamel paint
3. Mixing of epoxy resins
4. Non-vented operation of gasoline or diesel-powered equipment

## 6. CONTROL MEASURES

The following control measures must be adhered to during the construction of this project. The measures are in accordance with SMACNA Guidelines for Occupied Building under Construction, 1995, Chapter 3.

### a. HVAC Protection

1. All ductwork delivered to the site will be wrapped with plastic to prevent the introduction of debris and moisture. It will be stored inside the building or in storage containers.
2. All openings in the ductwork will be sealed with plastic after each day to ensure that construction dust and odors do not enter the system.
3. Special consideration must be taken with all lined ducts. Lined ducts must not only be protected from moisture when stored, but also when installed.
4. HVAC equipment delivered to the site will be covered with plastic or placed in a location inside the building where it will not be exposed to dust or moisture.
5. If any of the project's mechanical systems are to be used during construction, MERV-8 filters must be used and replaced prior to occupancy.
6. For HVAC systems that are used during the construction process, proposed cleaning procedures shall be submitted for review. As a

minimum, all dirt, foreign material, stains, etc. shall be removed from the HVAC equipment and the interior spaces of compartmental equipment shall be vacuumed. Contractors shall remove all dirt from any ductwork prior to installation.

7. It will be the responsibility of each individual Contractor to ensure that the construction dust and odor from their construction activities are contained.
8. MERV-8 filter media will be used as specified in the LEED documentation for all equipment used for temporary purposes. If Contractors are working in areas that the HVAC system is operational it is their responsibility to notify the CM so that the appropriate protective measures can be implemented.
9. Return air shall be isolated from surrounding environment when possible at all times. Return air openings shall be sealed with plastic or high efficiency filtration. All/any duct leaks will be repaired immediately upon discovery.

b. Source Control

1. As required by the project specifications and whenever possible use low emitting caulks, paints, adhesives, sealants and cleaning products. This is particularly important if there are people working in the area where these products are being applied or installed. Use bottled gas instead of diesel when using fuel powered equipment. Consider using electric equipment when possible, such as forklifts and chainsaws. Equipment that is not being used should be cycled off.
2. Keep exposure of emissions to a minimum. Containers of wet products (paint, adhesives, etc.) should be kept closed when not in use. Use chemicals in well-ventilated areas.
3. Before discarding, cover or seal waste materials that can release odor or dust. Dispose of partially full containers of old or unneeded chemicals. Promptly discard all waste materials in the appropriate waste receptacle. Waste materials that are recyclable should be deposited in the appropriate recycling receptacle.
4. No smoking is allowed in the building at any time.
5. Keep equipment off when not needed.
6. Minimize vehicle traffic from access to or near the building when close-in occurs.
7. Direct exhaust pollution sources to the outside of the building using filtration when necessary.
8. Carefully read labels of cleaning products for health hazard related information and directions for their proper use. Use cleaning chemicals that have low VOC's. Increase ventilation for products that release VOC's. Cleaners that are phosphate free are recommended.
9. Use Best Practice cleaning methods to avoid creating dust.

c. Pathway Interruption

1. During construction, it may be possible to isolate areas of work to prevent contamination of clean or occupied spaces. When possible, erect barriers such as dust curtains or plastic sheets between work areas to prevent unwanted airflow from dirty to clean areas.

2. Dust and odor producing materials should be kept away from air intakes. Construction products and waste materials should not be stored in the mechanical rooms.
  3. Walk-off mats will be placed at entrances to the project when the project is closed in. These mats must be used to limit the amount of foreign debris to enter the building. Location of pollutant sources may be required to be located throughout the project so as to have the minimum effect on the building and its occupants. Consult with the CM supervisor prior to any placement of pollutant sources (i.e.: operating equipment, vehicle, mixing equipment, etc.)
- d. Housekeeping
1. Reduce construction contaminants in the building prior to occupancy through HVAC and regular cleaning activities. Keep equipment and materials that are not being used clean by covering them or moving them to a clean area. Building materials should be stored in a weather tight, clean area prior to unpackaging for installation. The HVAC Contractor shall, prior to testing and balancing, ascertain that all coils, air filters and fans are clean and replace all filters used during construction with MERV-8 filters.
  2. Remove accumulated water as soon as possible. Keep work areas dry. Porous materials such as insulation should be protected from moisture. Porous items such as duct insulation that remain damp for more than a few hours shall be replaced. Equipment such as terminal units that have duct insulation in the airstream should be stored on pallets (away from water) and should be sealed with plastic prior to installation. Before installation, check for possible damage to equipment from high humidity. Repair or replace any damaged equipment.
  3. Suppress dust in the construction area with wetting agents or sweeping compounds. Regularly clean the dust from the site using a damp rag, wet mop or vacuum equipped with a high efficiency particulate filter or wet scrubber. Remove spills or excess applications of solvent-containing products as soon as possible. Do not store open containers of used or unused chemicals.
- e. Scheduling
1. Special construction scheduling is necessary to ensure dissipation of emissions from finishes that emit significant quantities of harmful materials during curing are not absorbed by materials that would act as sinks for storage and subsequent release of these unwanted substances into building spaces and mechanical systems after project occupancy. Whenever possible, complete application of wet and odor-emitting materials such as paints, sealants and coatings in significant work areas before installing materials that act as sinks for harmful substances such as ceiling tiles, carpets, insulation, gypsum products and fabric-covered furnishings. Consult the project schedule and the CM supervisor for further direction on this item.

END OF SECTION 01410

## SECTION 01421 - REFERENCE STANDARDS AND DEFINITIONS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 DEFINITIONS

- A. General: Basic contract definitions are included in the Conditions of the Contract.
- B. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.
- C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.
- D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": The term "furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": The term "install" describes operations at the Project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.
- I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
  - 1. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
  - 2. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
  - 3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
    - a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

- J. "Project site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

### 1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the 16-division format and CSI/CSC's "MasterFormat" numbering system.
- B. Specification Content: These Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
  - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

### 1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.
- C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different but apparently equal to the Architect for a decision before proceeding.
  - 1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- D. Copies of Standards: Each entity engaged in construction on the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

1.5 GOVERNING REGULATIONS AND AUTHORITIES

- A. Copies of Regulations: Obtain copies of any regulations necessary and retain at the Project site to be available for reference by parties who have a reasonable need.

1.6 SUBMITTALS

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01421

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## SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

Refer to the specific scopes of work for clarification of responsibility of the items specified herein.

### PART 1 – GENERAL INFORMATION

#### 1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 0 and Division 1 Specification Sections, apply to this Section.

#### 1.02 SUMMARY

This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection, and shall be subject to the Construction Manager's approval.

- A. Temporary utilities required include, but are not limited to:
- Water service and distribution
  - Temporary electric power and light
  - Telephone service
  - Storm and sanitary sewer
- B. Temporary construction and support facilities required include, but are not limited to:
- Dewatering facilities and drains
  - Temporary heating, ventilating, humidification, and air conditioning
  - Field offices and storage facilities
  - Temporary roads and paving/construction parking/mud/snow and ice clean-up
  - Sanitary facilities, including drinking water
  - Temporary enclosures
  - Hoists and temporary elevator use
  - Temporary project identification signs and bulletin boards
  - Waste disposal service and progress cleaning
  - Construction aids and protection
- C. Security and safety facilities required include, but are not limited to:
- Temporary fire protection
  - Barricades, warning signs, lights
  - Enclosure fence and security maintenance
  - Environmental protection
  - Safety requirements

D. Controls

- Workday
- Lunch wagons
- Erosion control
- Excavation material
- Excavation training
- Material inventories
- Deliveries

1.03 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:

- Municipal and Labor & Industry Building Code requirements
- Health and safety regulations
- Utility company regulations
- Police, Fire Department and Rescue Squad rules
- Environmental protection regulations

B. Inspections: Arrange for authorities, having jurisdiction, to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.04 PROJECT CONDITIONS

A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the site. They shall be removed, relocated as required by the progress of the work, or directed by the Construction Manager.

B. Existing Utilities and Systems:

1. Existing systems shall be maintained at all times unless approved (48 hrs. notice of shutdown) by Owner. Permanent heating, plumbing and electrical systems shall be activated and maintained during owner occupancy of existing facilities. Facilities shall be maintained at 70°F.
2. Contractors interrupting services due to their construction operations shall provide temporary utility lines, as required, to maintain services.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Provide new materials; if acceptable to the Construction Manager, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Specification Section 06100 Rough Carpentry.
- C. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread ratings that conform to UL-214, ASTM-E-84, NFPA-701 and MVSS-302. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- D. Water: Provide potable water approved by local health authorities.
- E. Open-Mesh Fencing: Provide 11-gauge, galvanized two inch, chain link fabric fencing, six (6) feet high with galvanized steel pipe posts, 1-1/2" I.D. for line posts and 2-1/2" I.D. for corner posts.

## 2.02 EQUIPMENT

- A. General: Provide new equipment; if acceptable to the Construction Manager, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light, for connection of power tools, equipment, and GFI breakers.
- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress.
- E. Electrical Welding Outlets: These will not be provided. Each Contractor will be responsible for his own welding power.
- F. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- G. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.

- H. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- I. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustions type, properly vented and fully enclosed with a glass fiber, reinforced polyester shell or similar nonabsorbent material.
- J. First Aid Supplies: Comply with governing regulations.
- K. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.

Comply with NFPA 10 classification, extinguishing agent and size required by location and class of fire exposure.

### PART 3 - EXECUTION/SCOPE RESPONSIBILITIES

#### 3.01 INSTALLATION (BY APPLICABLE CONTRACTORS)

- A. Use qualified personnel for installation of temporary facilities. Location facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

#### 3.02 TEMPORARY UTILITY INSTALLATION(BY APPLICABLE CONTRACTORS)

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
  - 1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
  - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, each Contractor shall provide trucked-in services at their expense as required to complete their work.
  - 3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.

#### Use Charges:

Cost or use charges for temporary facilities are to be paid by the Contractor requiring or providing the temporary facility unless noted otherwise.

Owner will pay utility consumption costs during construction for construction activities only.

- B. Water Service: The Plumbing Contractor shall install water service and distribution piping of sizes and pressures adequate for construction. Provide 3/4" hose bib termination at each story of construction work, located so that any area of building construction can be reached with a 100 ft. length of hose. Water service may be run from a temporary or permanent source.
1. Sterilization: Sterilize temporary water piping prior to use.
  2. Protect system from freezing.
  3. Maintain 30 psig. water pressure with 5 gpm. flow rate.
  4. Owner shall pay for cost of water consumed during construction. Contractor shall take the necessary steps not to be wasteful.
- C. Temporary Electricity Power Service:
1. After start of work at project site, when requested by the Construction Manager, the Electrical Contractor shall provide a temporary electrical power distribution system sufficient to accommodate temporary lighting and construction operations, including the use of power tools, and start-up of specified building equipment which must be tested, started or placed into use prior to completion of its permanent power connections. Provide 480 volts, 3 phase, 3 wires, 60 hertz and an equipment grounding conductor as well as 120 volts, 1 phase, 15 amperes, 60 hertz for lighting. Provide weatherproof, grounded wiring with overload protection; with direct wired connections, where feasible, and for voltages up to 220/208 volts. Locate multiple outlets for 120 volt power, not less than 4 gang, at each story of construction, spaced so that the entire area of construction can be reached by power tools on a single extension cord of 100' maximum length. Maximum 20 Amp circuit breaker, four (4) receptacles per circuit breaker.
  2. The Owner will pay for cost of all electric energy used for construction activities.
  3. The Electrical Contractor shall provide and pay for maintenance, servicing, operation, and supervision of lines installed.
  4. Provide service with ground fault circuit interrupter feature, as per NEC and OSHA requirements. The Electrical Contractor shall have a cord inspection program in place. Electrical Contractor maintain the inspection records on site.
  5. As permanent power distribution system is accepted as substantially complete,

either entire system or usable portions thereof, the Electrical Contractor shall make suitable provisions for temporary use thereof, and remove unused portions of temporary system.

6. If required, provide meters for electrical power.
  7. When temporary electrical lines are no longer required, they shall be removed by the Electrical Contractor and any part, or parts, of the grounds or buildings disturbed or damaged shall be brought back to their original condition.
  8. Electricity from existing lines may be used at no charge to the Contractor. Each trade shall provide extension cords from the existing facilities, as required, for the execution of the Work. Electrical power for welding equipment will not be available.
  9. The Electrical Contractor shall maintain and operate permanent electrical supply and distribution system until time of final acceptance and transfer of operation to Owner's personnel.
  10. The Electrical Contractor shall install switching controls for all lighting which will enable turning off temporary lighting during off-construction hours.
  11. Temporary power supplies to the Construction Manager's Office Conference/Office Complex shall be installed with service connection by the Electrical Contractor.
  12. The Electrical Contractor will provide power for oil or gas fired temporary heaters, if required by the Construction Manager. It will be connected so that it can remain "live" when the lighting has been turned off.
  13. The Electrical Contractor will provide 24-hour temporary power to any heat tape (installed by others) on temporary water and/or fire lines. All temporary heat work will comply with existing OSHA requirements.
  14. Construction circuits shall be separate and independent from temporary lighting.
- D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, the Electrical Contractor shall provide temporary lighting with local switching.

The Electrical Contractor shall provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight and general lighting as stated below:

1. Provide uniformly spaced general lighting utilizing one (1) 150 watt incandescent lamp equivalent to 1.0 watts/sq. ft. of floor areas (minimum one (1) lamp per room), and one (1) 100 watt lamp per 50' of corridor or per flight of stairs.
2. Limit lighting installations to intensities which will accommodate normal access and workmanship requirements, recognizing that each entity performing work

requiring higher intensity lighting will provide supplementary plug in temporary lighting and localized areas where such work is in progress.

3. As permanent lighting system is substantially complete for each story or usable portion thereof, the Electrical Contractor shall make suitable provisions for temporary use thereof and remove unused portions of temporary lighting system.
4. The Electrical Contractor shall maintain and operate permanent lighting system until the time of final acceptance and transfer of operation to Owner's personnel, including turning off lighting during off-construction hours.
5. The Electrical Contractor shall replace bulbs that are burned out or substantially dimmed by substantial hours of use.
6. Special lighting required for construction activities shall be provided by Contractor requiring it.
7. The Electrical Contractor shall provide safety lighting in the stairways, hallways, and exterior security lighting (as required) on a 24-hour basis.
8. The Electrical Contractor will provide a termination box in the Contractor's office trailer area for hook-up of the Contractor's trailers. Cost for individual Contractor trailer hook-up will be borne by the Contractor requiring this service. Use of electric heaters in those trailers and shanties will not be permitted.

E. Temporary Telephones:

1. Each Contractor shall be responsible for and provide for his own temporary telephone service.

F. Storm Sewers and Drainage:

1. If storm sewers are available, the Sitework Contractor shall provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available, or cannot be used, Sitework Contractor shall provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, Sitework Contractor provide containers to remove and dispose of effluent off the site in a lawful manner.
2. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
3. Comply with the soil erosion and sedimentation control plan and local authorities having jurisdiction.

3.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION  
(BY APPLICABLE CONTRACTORS)

A. General:

1. Locate field offices, storage, sanitary facilities and other temporary construction and support facilities for easy access after approval from the Construction Manager.
2. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines.

B. Dewatering Facilities and Drains:

1. For temporary drainage and dewatering facilities, and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division-2 Sections. Where feasible, utilize the same facilities.
2. The Sitework Contractor shall be responsible to maintain the site, excavations and construction free of water. Review contract scopes for dewatering requirements for each Contractor.
3. Plumbing Contractor shall provide temporary storm water drainage from the building and the Sitework Contractor shall control roof drainage from building on site.
4. Sitework Contractor shall be responsible to drain or pump water and remove debris from the site so as not to delay his continuous work or progress. This shall include operating pumps during second shift in order to facilitate next-day continuation of work.
5. Sitework Contractor shall excavate in a manner that prevents all surface water from flowing into the building area. Sitework Contractor shall be responsible to remove any runoff water or debris which enters the building area.
6. Sitework Contractor shall continue to drain site and remove debris until designed grades are obtained.
7. Upon completion of building foundations, each Contractor shall be responsible to remove water and debris required to complete his work.

C. Temporary Heating, Ventilating & Air Conditioning:

1. Temporary heating shall be provided and maintained by the Contractor performing the work if the outside temperature falls below 40°F at anytime during the day or night for all exterior work or work performed prior to the building being generally enclosed by walls and roof.
2. Each Contractor shall furnish temporary heat by acceptable means to provide sufficient heat to maintain a temperature of 55°F, 24 hours a day throughout the

entire area of the work for which the Contractor is responsible.

Except where use of the permanent system is authorized, provide vented, self-contained LP gas or fuel oil heaters with individual space thermostatic control. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited. Temporary heating may not be provided using electrical heating equipment if using electrical power supplied by the Owner.

3. As soon as the building, or portions thereof, is generally enclosed with walls and roof and temporary heat is required for scheduled work, or required to facilitate proper workmanship, and permanent heating system is not yet operable or authorized for use, the Mechanical Contractor shall provide temporary heat or air conditioning service for every entity authorized to do work at the project site. The Mechanical Contractor shall maintain temperatures as indicated by other Specification Sections for each type of work to be performed. The Construction Manager shall be the sole arbiter of when the building is considered generally enclosed.
4. The Drywall Contractor shall install, maintain, and remove temporary enclosure of windows, doors and roof openings until the permanent materials are in place when such enclosures will result in the building being generally enclosed.
5. After the conditions of construction require continuous 24 hour heat in the building, as determined by the Construction Manager, the Mechanical Contractor shall provide, operate, and maintain temporary radiation or unit heaters to provide required temperatures (minimum 55°F) for the conduct of the work. This service shall be continued until the permanent heating system has been completely installed and is in operation and the buildings of the project completed. The Mechanical Contractor shall furnish and pay for all fuel as required for providing temporary heat and air conditioning after the building is generally enclosed. The Owner shall pay for all fuel costs incurred to operate the permanent HVAC systems for temporary purposes. As permanent heating/cooling system is substantially complete and operational for each story or usable portion thereof, the Mechanical Contractor shall make suitable provisions for use thereof in temporary heating and cooling. The Mechanical Contractor shall maintain and operate permanent system for temporary heating/cooling purposes, including service to occupied areas, if any, until time of final acceptance or transfer of operation to Owner's personnel, for major parts of system if not for entire heating system.
6. All permanent heating and air conditioning equipment used to supply temporary heat and air conditioning shall be completely cleaned and reconditioned by the Mechanical Contractor prior to final acceptance. NOTE: All permanent equipment shall receive required scheduled maintenance while use for temporary service. Radiator traps and valves used in the heating system during the period of its operation to supply temporary heat shall not be reinstalled in the permanent system. Install new disposable filters and clean non-disposable filters prior to final acceptance. Replace significantly worn parts and parts that have been subject to unusual operating conditions.

7. The Mechanical Contractor shall remove all soot, smudges, and other deposits from walls, ceilings, and all exposed surfaces which are the result of the use of any temporary heating equipment including the use of the permanent heating system for temporary heat purposes. Finish work shall not be done until all such surfaces are properly cleaned.
8. Temporary Ventilation: Any Contractor requiring ventilation for work shall provide fans or other necessary equipment to condition air, provided prior approval has been obtained from the Construction Manager.
9. Humidification: Where control of ambient humidity is required for proper performance of the work, or for curing/drying of installed work or for protection of installed work from deterioration due to variations in ambient conditions, each Contractor shall provide his own temporary humidification or dehumidification equipment to maintain the required conditions. Coordinate the use of the equipment with temporary heating to produce the required conditions with a minimum overall use of energy.
10. Permanent electrical power needed to operate permanent heating system must be provided by the Electrical Contractor in conjunction with building enclosure, or the Electrical Contractor shall furnish adequate temporary power to operate permanent heating system and bear all cost associated to provide that power.

D. Field Offices:

1. Contractors shall provide offices for their own personnel. All type and location of jobsite offices and equipment will be approved by the Construction Manager. Contractor's offices shall be a maximum of 40' in length.
2. Storage and Fabrication Sheds: Each Contractor shall provide storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces. All steps and platforms connected to shelters must be per OSHA regulations.
3. All offices and sheds must have the Contractor's identification on them.

E. Temporary Roads and Paving, Construction Parking:

1. Sitework Contractor shall construct and maintain temporary roads, to adequately support the indicated loading and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas and parking where the same permanent facilities will be located.
2. Snow removal will be performed by the Sitework Contractor for access roads and storage areas. Each Contractor shall provide any additional snow removal required to maintain the schedule.

F. Sanitary Facilities:

1. The Construction Manager shall provide temporary toilets. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

Provide toilet tissue for each facility.

2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit type privies will not be permitted. Provide means of locking facilities when construction is not in progress.

Provide separate facilities for male and female personnel when both sexes are working in any capacity on project site.

Provide one unit for use of Owner representative's office/conference meeting complex.

3. Drinking Water Facilities: Each Contractor shall provide containerized tap-dispenser bottled-water type drinking water units, including paper supply. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45° to 55°F (7° to 13°C).

G. Temporary Enclosures:

1. All temporary enclosures required for protection of exterior construction in progress and completed from exposure, bad weather, other construction operations, and similar activities and to maintain the progress schedule, shall be provided by each Contractor as necessary to protect their work.
2. Prior to the building being enclosed, all temporary enclosures required for protection of interior construction in progress and completed from exposure, bad weather, other construction operations, and similar activities and to maintain the progress schedule, shall be provided by each Contractor as necessary to protect their work.
3. Where heat is needed and the permanent building enclosure is not complete (windows, doors, and roof openings not complete), the Drywall Contractor shall provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
4. Install tarpaulins securely with noncombustible wood framing and other materials. Close openings of 25 sq. ft. or less with plywood or similar materials.
5. Each Contractor is required to construct, maintain, and remove dust partitions

required to prevent dust from entering adjacent areas.

H. Temporary Lifts and Hoists:

1. Each Contractor shall be responsible for their own hoisting.

2. Existing Elevators:

A. N/A

3. New Elevators:

A. N/A

I. Project Identification and Temporary Signs

1. The Construction Manager shall prepare project identification and other signs, as approved by the Owner of the size indicated; install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel.

2. Provide on (1) sign erected on the site, where directed, to identify the project. Sign shall include Project name, Owner's name, Architect's name, and Construction Manager's name. Size shall be 4' x 8'; color and lettering style shall be as designed by the Architect.

3. Engage an experienced sign painter to apply graphics.

4. Temporary Signs: The Construction Manager shall prepare signs to provide directional information to construction personnel and visitors as required by the Construction Manager.

J. Waste Disposal Services:

1. The Construction Manager will provide trash collection containers for construction debris, exclusive of masonry, rock, earth, etc., and pay for all debris disposal costs for them. Each Contractor on the project will be required to clean up, and deposit in the dumpster, all debris generated by his Contract work on a daily basis. This requirement shall be enforced by the Construction Manager and will result in cost assessment against a Contractor who fails to perform daily clean-up. Each Contractor will be responsible for flattening or crushing all trash as necessary when placed into the dumpster. Hazardous material shall not be placed in the collection container. **Comply with all LEED requirements as detailed in Sections 01720 and 01900.**

K. Construction Aids, Protection and Facilities

1. The Steel Contractor shall provide temporary ladders, ramps, and walkways

required to access upper levels until permanent systems are installed. They shall be installed and maintained throughout the duration of the project and comply with all OSHA requirements. Removal of these shall be by the Drywall Contractor when requested by the Construction Manager.

2. Each Contractor will be responsible for protecting any floor openings that have been opened for work under his trade.
3. Each Contractor, upon working in any of the area named in the above paragraph, shall remove the safety covering and handrail to perform his work. Upon completion of his work for the day, lunch, or breaks, or any time when the individual Contractor is not working in that opening, the safety covering and handrail must be replaced by the Contractor removing it. At the end of each day, each Contractor will inspect the site and install all safety coverings and handrails. If coverings and handrails are not being reinstalled by Contractors responsible for replacement, then Construction Manager will replace at Contractor's expense. At the end of the project, or in order to install permanent construction, the Construction Manager shall remove all coverings and handrails.
4. The Drywall Contractor shall provide safe, temporary stairs, constructed of secure, dimensional lumber, with all railings and closures according to OSHA regulations, until permanent stairs are installed. Temporary stairs must be provided at the point when above grade floors are framed and decked, and require access by trades, in addition to the steel erection crews.
5. The Contractors requiring access to above grade work are responsible for providing ladders, scaffolding and appropriate methods to access their work. Contractors desiring use of in place above grade work platforms must arrange directly with the party that owns the equipment and make all rental and insurance arrangements directly with that party.
6. All work platforms, scaffolding, etc., on the project shall be available for access by the Owner, Architect, Municipal Authority, Test Agency and/or Construction Manager, and these parties shall be insured and held harmless when using these facilities by the Owner of the facility.
7. Each Contractor shall be responsible for maintaining safe walkway and stair traffic areas, using anti-skid methods, routine sweeping, snow, mud and/or ice removal, and any other reasonable method for safe usage.

### 3.04 SECURITY AND SAFETY FACILITIES INSTALLATION

#### A. Temporary Fire Safety

1. Shall be maintained in place until permanent fire protection system is available for use. The Fire Protection Contractor shall provide the permanent sprinkler fire protection system for use at the earliest possible date after building enclosure and 55°F temperatures are maintained to protect the building.

2. Until fire protection needs are supplied by permanent facilities, the Construction Manager shall install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers."
  3. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
  4. Store combustible materials in containers in fire-safe locations.
  5. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas. Prohibit smoking within the enclosure building.
  6. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
- B. Barricades, Warning Signs and Lights: (Protection of Contractors Work)
1. The responsible Contractor shall comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against.
- C. Building Security Enclosure and Lockup:
1. Each Contractor shall be responsible for assisting the Construction Manager in maintaining a secure building at all times.
  2. Each Contractor is responsible for the secure storage of their own material and equipment on and off the site.
- D. Environmental Protection:
1. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and Construction Manager, their employees and agents, from claims, losses, damage, and expenses including, but not limited to, attorney's fees arising out of performance of the work at it relates to any type of pollution related situations. This would apply to bodily injury, sickness, disease, or death, or to damages or destruction or contamination of tangible property arising out of the acts or omission of the Contractor or the joint negligent acts of the Owner or Construction Manager, or anyone for whose acts the Contractor may be liable.
  2. The Construction Manager will designate area available for construction storage.
  3. Each Contractor shall provide protection, operate temporary facilities, and conduct

construction in ways and methods that comply with all environmental regulations, and minimize the possibility that air, water, and soil become contaminated or polluted as a result of work or storage so supplies and materials, or equipment usage.

4. Each Contractor will designate and train a responsible employee in environmental contamination procedures, including, but not limited to, emergency responses, material and waste inventories, spills and leak precautions and responses, inspections, housekeeping, security, and external factors.
5. Open burning will not be permitted.

E. Safety Requirements

1. All work shall be performed in accordance with rules, regulations, procedures and safe practice and/or OSHA and all other Government agencies having jurisdiction over the project.
2. Safety precautions and programs:
  - a. Each Contractor shall be responsible for initiating, maintaining and supervising safety precautions and programs in connection with the work. The name of the safety officer for each Contractor shall be provided to the Construction Manager.
  - b. All Contractors shall comply with the provisions of the "Specific Safety Requirements of the Construction Safety Act," the "Occupational Safety and Health Act," and Federal, State and local requirements.
  - c. If a Contractor fails to maintain the safety precautions required by law or directed by the Construction Manager, the Construction Manager may take such action as necessary and charge the Contractor for all incurred costs.
  - d. The failure of the Construction Manager to take any such action shall not relieve the Contractor of his obligations.
  - e. The Contractor individually shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance or operation.
  - f. Prior to mobilizing to the job, the Contractor shall submit to the Construction Manager, in writing, a description of his safety program for review and comment. During the conduct of the work, the Contractor shall immediately notify the Construction Manager, in writing, of all accidents and shall submit a written report describing in detail the circumstances of each accident within 24 hours of its occurrence.



- e. The Contractor shall not load or permit any part of the work to be loaded so as to endanger its integrity and safety.
  - f. The use of audio equipment and headsets will not be permitted on the construction site.
4. Emergencies:
- a. In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss and shall immediately notify the Construction Manager of such emergency conditions. Any claims made by the Contractor for additional compensation or extension of time on account of emergency work shall be processed in accordance with the Contract Documents.
5. Indemnification:
- a. The Contractor shall indemnify and hold harmless the Owner, the Construction Manager, the Architect/Engineer, all municipal authorities, and their agents and employees, from and against all claims, damages, losses, and expenses including, but limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury, sickness, disease or death, or to injury to or destruction of tangible property (other work than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.
  - b. In any and all claim against the Owner, the Construction Manager, the Architect/Engineer, or any of their agents or employees, by any employee of the Contractor and Subcontractor, anyone directly or indirectly employed by any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the type of damages, compensation or any Subcontractor under Worker's Compensation Acts, disability benefit acts or other employee benefit acts.
  - c. The obligations of the Contractor under this paragraph shall not extend to the liability of the Architect/Engineer or the Construction Manager, his agents or employees arising out of (1) the preparation of approval of maps, drawings, opinions, reports, surveys, design or specifications, or (2) the giving of or failure to give directions or instructions by the Architect/Engineer or the Construction Manager, their agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

- d. No provision of this Subparagraph shall give rise to any duties on the part of the Architect or the Construction Manager not otherwise provided for by contract or by law.
- e. In the event that any party is requested but refuses to honor the indemnity obligations hereunder, then the party refusing to honor such requests shall, in addition to all other obligations, pay the cost of bringing any such action, including attorney's fees to the party requesting indemnity.

### 3.05 CONTROLS

#### A. Workday:

1. The workdays for the project are defined as 7:00 a.m. – 3:30 p.m., Monday through Friday, & 7-3:30 Saturday, with lunch period from 12:00 – 12:30 p.m. The progress schedule may require Contractors to perform work other than the normal workday and in addition to the normal workday, to meet milestones in the progress schedule for the project, or to make up time previously lost to regain the progress schedule requirements or to prevent interruption of the Owner's ongoing operation.
2. Working times other than the normal workday or in addition to the normal work day, must be arranged in advance with the Construction Manager.
3. Contractors who require additional workday hours to regain work time previously lost to meet the requirements of the project schedule shall be assessed for all costs including Construction Manager supervision and other Contractor cost necessary for the performance of their work.

#### B. Lunch Wagons:

1. Lunch wagons, catered events of other non-construction related functions shall not be permitted on the project site, except by the written permission of the Owner and Construction Manager.
2. No alcoholic beverages or controlled substances shall be allowed on the project at any time.

#### C. Erosion Control:

1. The Sitework Contractor shall employ all methods required to comply with Local, State, and Federal requirements to control erosion from the project site, including drainage control ditches, sediment basins, straw bale dykes and silt fencing.

#### D. Excavation Training:

1. Any Contractor performing excavation shall have an OSHA trained person on site during all excavation operations. This person shall evaluate soil types and

conditions to determine the required shoring and excavation methods.

E. Material Inventories:

1. Contractors shall coordinate the delivery and storage on the jobsite of all significant materials
2. Each Contractor shall be responsible for the proper location, secure, and weather resistant storage as required of all materials. This includes placement of materials not to obstruct passage on site or within building structures or in any way which causes impediment or obstruction to other Contractors.
3. All material inventories must be stored by the Contractor to avoid excessive loads on building structure.
4. When directed by the Construction Manager, a Contractor shall remove or relocate material inventories as required for the progress of the project.

F. Deliveries:

1. All Contractors are required to properly instruct material suppliers and vendors to address deliveries to them specifically by named responsible party at the jobsite and require advance notice.
2. All deliveries addressed to the project in general, the Owner, Architect or Construction Manager, will be refused and returned to shipper.
3. The Owner will not be responsible for receipt, handing, or loss of any materials which are shipped to the Owner in error and received unknowing of relationship to the project.
4. Contractor receiving materials at the jobsite shall be responsible for prevention of any mud or other deposits on public roadways or other areas outside project limit lines, which may result due to methods of material delivery. Contractor shall instruct delivery conveyor to take appropriate measures to prevent depositing mud or other construction deposits outside contract limit lines. Total responsibility of cleanup of mud or other construction deposit outside of contract limit lines will be the responsibility of the Contractor receiving the delivery.

3.06 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended use to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control,

ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Construction Manager requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or not later than Substantial Completion. Complete or, if necessary restore, permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.
  2. The Sitework Contractor shall remove temporary paving that is not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development remove soil and aggregate fill that does not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt, and other petrochemical compounds, and other substance which might impair growth of plant materials or lawns. Repair or replace street paving, curbs and sidewalks at the temporary entrances, as required by the governing authority.

END OF SECTION 01500

SECTION 01720 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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. Salvaging nonhazardous construction waste.
  - 2. Recycling nonhazardous construction waste.
  - 3. Disposing of nonhazardous construction waste.
- B. Related Requirements:
  - 1. Section 02110 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials including the following:
  - 1. Demolition Waste:
    - a. Asphalt paving.
    - b. Concrete.
    - c. Concrete reinforcing steel.
  - 2. Construction Waste:

- a. Masonry and CMU.
- b. Lumber.
- c. Wood sheet materials.
- d. Wood trim.
- e. Metals.
- f. Roofing.
- g. Insulation.
- h. Carpet and pad.
- i. Gypsum board.
- j. Piping.
- k. Electrical conduit.
- l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
  - 1) Paper.
  - 2) Cardboard.
  - 3) Boxes.
  - 4) Plastic sheet and film.
  - 5) Polystyrene packaging.
  - 6) Wood crates.
  - 7) Plastic pails.

#### 1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 7 days of the date of Notice to Proceed. -

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
1. Material category.
  2. Generation point of waste.
  3. Total quantity of waste in tons.
  4. Quantity of waste salvaged, both estimated and actual in tons.
  5. Quantity of waste recycled, both estimated and actual in tons.
  6. Total quantity of waste recovered (salvaged plus recycled) in tons.
  7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. LEED Submittal: LEED letter template for Credit MR 2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements

for the credit have been met.

#### 1.7 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: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference: Conduct conference at Project site to comply with requirements of this Section. Review methods and procedures related to waste management including, but not limited to, the following:
  - 1. Review and discuss waste management plan including responsibilities of waste management coordinator.
  - 2. Review requirements for documenting quantities of each type of waste and its disposition.
  - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
  - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
  - 5. Review waste management requirements for each trade.

#### 1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
  - 1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
  - 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
  - 3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.
- 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 recycled materials.
  - 5. Savings in hauling and tipping fees by donating materials.
  - 6. Savings in hauling and tipping fees that are avoided.
  - 7. Handling and transportation costs. Include cost of collection containers for each type of waste.

8. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
  1. Comply with operation, termination, and removal requirements in Section 01500 "Construction Facilities and Temporary Controls."
- B. Waste Management Coordinator (WMC): Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project. WMC shall be permitted to provide other project management services during the course of the Work in addition to those responsibilities enumerated herein.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
  1. Distribute waste management plan to all Contractors/Sub-contractors within three days of submittal return.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
  2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
  1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

### 3.3 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

### 3.4 RECYCLING CONSTRUCTION

#### WASTE

#### A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

#### B. Wood Materials: Recycle with crates.

#### C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

### 3.5 DISPOSAL OF WASTE

#### A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

#### B. Burning: Do not burn waste materials.

#### C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 01720

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SECTION 01740 – CHANGE ORDER REQUEST SUBMISSION FORMAT

The following is a general listing of requirements relating to change order work. Refer to the Contract, General Conditions, Supplementary Conditions, General Scope, and Specification for full requirements.

1. Refer to Section 00735 – General Requirements for the allowable overhead and profit mark-ups.
2. Any proposed change order / request for the project must be submitted in the format example shown in this specification section.
3. All labor and material costs must be separated with their applicable mark-ups detailed.
4. The CM, the Owner, or the Architect may request additional breakdown information, back-up, etc., at their discretion at any time.
5. Each price submitted must include the following:
  - a. Detailed description of the issue
  - b. Location in the building
  - c. Reason why it's extra
  - d. Drawing, Specification or other documentation references
  - e. RFI reference
  - f. Submittal reference
  - g. CM price request reference
6. For price requests or time and material work, obtain approval from the CM's project manager in writing prior to proceeding with the extra work.
7. Notify the CM in writing immediately (with 24 hours) upon discovering an extra work issue.
8. Any work authorized to proceed on a time and material basis must have the T&M tickets signed daily by the CM.
9. Extra work prices or unsigned T&M tickets forwarded after the work is completed will not be accepted.
10. For emergency work that may impact the schedule, verbal cost budgets must be submitted immediately. The work may be authorized to proceed at the Whiting-Turner project manager's and/or owner's discretion.
11. Return extra work price requests in 5 days. Finalize T&M tickets in 5 days.
12. Any item of extra work that cannot be agreed upon at a fixed price will be performed on a time and material basis that is not to exceed an agreed upon budget.
13. Overhead and profit shall include all insurance and bond costs.

**Labor Bill Rates & Change Request Submission Formats**

**A. Labor Billing Rate Calculation – Example**

Base Rate	\$17.40
Fringe Benefits ( @ % of base rate) *	8.53
Subtotal Rate	<u>\$25.93</u>
Insurance & Taxes ( @ % of subtotal rate) **	9.07
Subtotal – <b>Labor Rate</b>	<u><b>\$35.00</b></u>
Overhead & Profit (@ 15%)***	5.25
<b>Total – Hourly Billing Rate</b>	<b>\$40.25</b>

**NOTE:**

- \* The fringe benefit includes health, welfare or retirement benefits, vacation, holiday or sick leave pay.
- \*\* The insurance and taxes include employer payment for unemployment insurance, worker's compensation, FICA, Bonds, Gross Receipts, etc.
- \*\*\* Allowable mark-up will decrease on a scale based on the total amount of the proposed change. Refer to the supplementary general conditions for additional information. This note is typical for all of the examples above and below.

**B. Change Directive Calculation**

**1. Contractor**

Labor Billing Rate (\$35/hr x 50 hrs)	\$1,750.00
Fee – Overhead & Profit (@ 15%)***	262.50
Subtotal Labor	<u>\$2,012.50</u>
Material or Equipment	\$2,000.00
Fee – Overhead & Profit (@ 15%)***	300.00
Subtotal Material	<u>\$2,300.00</u>
<b>Total Costs</b>	<b>\$4,312.50</b>

**2. Subcontractor / Contractor**

Sub – Labor Billing Rate (\$35/hr x 50 hrs)	\$1,750.00
Fee – Sub Overhead & Profit (@ 15%)* **	265.50
Subtotal – Labor	<u>\$2,012.50</u>

Sub – Material or Equipment	\$2,000.00
Fee – Sub Overhead & Profit (@ 15%)* **	300.00
Subtotal – Material	<u>\$2,300.00</u>

**Total Costs-Subcontractor \$4,312.50**

Fee payable to Contractor	
Subcontractor Labor and Material	\$4,312.50
Contractor Overhead & Profit (@ 5%)	215.62
	<u>215.62</u>

**Total Costs \$4,528.12**

**3. Sub-Subcontractor / Subcontractor / Contractor**

Sub-Subcontractor Labor Billing Rate (\$35/hr x 50 hrs)	\$1,750.00
Fee – Overhead & Profit (@ 15%)* **	262.50
Subtotal- Labor	<u>\$2,012.50</u>

Sub-Subcontractor Material or Equipment	\$2,000.00
Fee – Overhead & Profit (@ 15%)* **	300.00
Subtotal-Material	<u>\$2,300.00</u>

**Total Costs – Sub-subcontractor \$4,312.50**

Fee payable to Sub-Contractor	
Sub-subcontractor Labor and Material	\$4,312.50
Subcontractor Overhead & Profit (@ 5%)	215.63
	<u>215.63</u>

**Total Costs – Subcontractor \$4,528.13**

Fee payable to Contractor	
Subcontractor Labor and Material	\$4,528.13
Contractor Overhead & Profit (@ 5%)	226.41
	<u>226.41</u>

**Total Costs \$4,754.54**

END OF SECTION 01740

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## SECTION 01750 – PAYMENT PROCEDURES

1. The following documents are included in section 00620 and 00625:
  - A. AIA Document G732, Application and Certification for Payment, Construction Manager as Advisor Edition
  - B. AIA Document G703, Continuation Sheet
2. A **PENCIL** (Proof) copy of the proposed Application for Payment must be submitted by the 20<sup>TH</sup> of the month to the WT Project Manager.
3. Upon approval of the Pencil copy by the WT Project Manager, the **ORIGINAL** Application for Payment must be submitted by the 25<sup>TH</sup> of the month to:  
The Whiting-Turner Contracting Company  
131 Continental Drive, Suite 404  
Newark, DE 19713  
Faxed copies are NOT acceptable.
4. Typical errors on invoice submissions are as follows. Please review this list prior to submitting your invoice. Invoices with errors will be returned. Typical errors:
  - A. AIA forms used must be the correct documents.
  - B. AIA forms must be original documents, not copies.
  - C. Invoice should reference the Owner's Purchase Order number.
  - D. Math is incorrect.
  - E. Invoice is not notarized .
  - F. Schedule of Values needs to be approved in advance prior to submission of invoice. It should be broken down by phases, floors, areas, systems, materials, labor, allowances, alternates, etc.
  - G. Schedule of Values must list a line item for close-out documents (As-Built, Warranties, Operations and Maintenance Manuals, Training Sessions, AIA close-out documents, etc.):
    - i. \$2,500 minimum, OR
    - ii. 3% of total contract amount, whichever is greater.
  - H. Retainage amount is incorrect – should be 5%.
  - I. Amount billed does not match work in place on site (obtain WT's prior approval)
  - J. Invoice is addressed improperly, should be addressed to:  
Delaware State University  
1200 N. DuPont Highway  
Dover, DE 19901  
**(But delivered to Whiting-Turner)**
  - K. Insurance certificate has expired. Current insurance must be on file.
  - L. Trade Contractor's Partial Release of Liens not attached.
  - M. Invoice is billing for stored materials, copies of shipping receipts, invoices and an insurance certificate for the building which houses the materials must be attached.
  - N. Invoice is billing for extra work that has not yet appeared on an AIA G701 Change Order.
  - O. Second tier Contractors / Suppliers Partial Release not attached .
  - P. Daily field reports or Safety meeting minutes have not been forwarded to the WT superintendent.
  - Q. Copies of Certified payroll reports have not been submitted.
  - R. Punchlist is not complete (applicable at end of project).
  - S. Close out documents not received or incomplete (applicable at end of project).

END OF SECTION 01750

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## SECTION 01770 – PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination Drawings
  - 2. Project meetings
- B. See Division 1 – Section 01040 – Project Coordination for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

#### 1.2 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule
  - 2. Preparation of the Schedule of Values
  - 3. Installation and removal of temporary facilities and controls
  - 4. Delivery and processing of submittals
  - 5. Progress meetings
  - 6. Pre-installation conferences
  - 7. Project closeout activities
  - 8. Startup and adjustment of systems
  - 9. Project closeout activities

### 1.3 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
  - 1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  - 2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
  - 3. Number of Copies: Submit three opaque copies of each submittal. Architect will return one copy.
  - 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

### 1.4 PROJECT MEETINGS

- A. General: Coordinate, schedule and conduct meetings and conferences at Project site with the Construction Manager.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Construction Manager, Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Construction Manager, Owner and Architect, within three days of the meeting.
- B. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Construction Manager and Architect of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents
    - b. Options
    - c. Related requests for interpretations (RFIs)
    - d. Related Change Orders
    - e. Purchases

- f. Deliveries
  - g. Submittals
  - h. Review of mockups
  - i. Possible conflicts
  - j. Compatibility problems
  - k. Time schedules
  - l. Weather limitations
  - m. Manufacturer's written recommendations
  - n. Warranty requirements
  - o. Compatibility of materials
  - p. Acceptability of substrates
  - q. Temporary facilities and controls
  - r. Space and access limitations
  - s. Regulations of authorities having jurisdiction
  - t. Testing and inspecting requirements
  - u. Installation procedures
  - v. Coordination with other work
  - w. Required performance results
  - x. Protection of adjacent work
  - y. Protection of construction and personnel
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- C. Progress Meetings: Conduct progress meetings at regular intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Construction Manager, Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Provide digital and hard copies of the construction schedule to the Construction Manager on a monthly basis unless indicated otherwise within the Construction Documents.
    - b. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period
- c. Review present and future needs of each entity present, including the following:
  - 1) Interface requirements
  - 2) Sequence of operations
  - 3) Status of submittals
  - 4) Deliveries
  - 5) Off-site fabrication
  - 6) Access
  - 7) Site utilization
  - 8) Temporary facilities and controls
  - 9) Work hours
  - 10) Hazards and risks
  - 11) Progress cleaning
  - 12) Quality and work standards
  - 13) Status of correction of deficient items
  - 14) Field observations
  - 15) Requests for interpretations (RFIs)
  - 16) Status of proposal requests
  - 17) Pending changes
  - 18) Status of Change Orders
  - 19) Pending claims and disputes
  - 20) Documentation of information for payment requests
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01770

## SECTION 01771 – CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Construction Schedule
  - 2. Submittals Schedule
  - 3. Daily construction reports
  - 4. Field condition reports

#### 1.2 SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first submittal
  - 2. Specification Section number and title
  - 3. Submittal category (action or informational)
  - 4. Name of subcontractor
  - 5. Description of the Work covered
  - 6. Scheduled date for Architect's final release or approval
- B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period and a copy of the digital file on CD.
- C. Daily Construction Reports: Submit two copies at weekly monthly intervals.
- D. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

#### 1.3 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals to Construction Manager, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

### 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
  2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 – Section 01300 – Submittals in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  4. Startup and Testing Time: Include not less than 10 days for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion
- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

## 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 15 days of date established for commencement of the Work unless otherwise indicated. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.
- C. Refer to Division 01 – Section 01780 – Construction Schedule for complete schedule requirements.

## 2.4 REPORTS

- A. Daily Construction Reports: Prepare and issue a daily construction report recording the following information concerning events at Project site to the Construction Manager:
  - 1. List of subcontractors at Project site
  - 2. Equipment at Project site
  - 3. Material deliveries
  - 4. High and low temperatures and general weather conditions
  - 5. Accidents
  - 6. Stoppages, delays, shortages, and losses
  - 7. Meter readings and similar recordings
  - 8. Orders and requests of authorities having jurisdiction
  - 9. Services connected and disconnected
  - 10. Equipment or system tests and startups
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit to Construction Manager a detailed report. Submit with a request for interpretation on CSI Form 13.2A or comparable form approved by Architect. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule to Construction Manager one week before each regularly scheduled progress meeting.
  - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Construction Manager, Architect and Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
  2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01771

SECTION 01780 – CONSTRUCTION SCHEDULE (REVISED ADDENDUM ③)

PART 1 - GENERAL

1.1 Construction Schedule

1. The following Optical Science Center for Applied Research Schedule is applicable to all bidders. The durations in the schedule are based on 5 day work weeks.
2. The Construction Schedule as approved by the Construction Manager and Owner will be an integral part of the Contract and will establish interim work completion dates for the various activities.
3. The Construction Schedule may vary in accordance with construction conditions. Each Contractor shall delay or expedite material and equipment deliveries (as necessary) and modify the required labor forces to accommodate these varying conditions.
4. Work is to commence upon receipt of the Letter of Authorization to proceed.
5. Within fifteen (15) days after receipt of a "Letter of Authorization to proceed", each Contractor shall submit a detailed preliminary Construction Schedule to the Construction Manager. The schedule will include breakdowns of total man days of field labor into major categories of work, time estimates of various categories of work and the crew size for each category.
6. Each Contractor shall organize his Construction Schedule per Phase, Building, Area, and/or Floor as required by the Construction Manager.
7. The Construction Manager shall schedule a meeting with the Contractor to receive the contents of each Contractor's preliminary Construction Schedule, coordinate the sequence of work and make all revisions required. The Construction Manager shall have the final authority concerning the sequence of work and durations of each activity. Each Contractor shall revise his schedule in accordance with that meeting and submit his schedule to the Construction Manager for approval. The Construction Manager will then develop the Project Construction Schedule. Each Contractor shall schedule and perform his work in accordance with the Construction Manager's Project Construction Schedule.
8. The Schedule shall be the basis for the dates to start and complete work for various portions of each contract and to complete work (including changes) for the Project. It shall be the duty of the Contractor to conform to the approved Schedule and to arrange his work in such a manner that it will be installed in accordance with the Schedule.
9. Each Contractor shall submit two (2) copies of an updated Construction Schedule comparing the original schedule to actual work in progress and projected work along with the preliminary application for payment.
10. A representative of each Contractor shall meet with the Construction Manager and furnish to him information necessary for such re-evaluating and updating and, if applicable, information with regard to changes in the work and the Contractor's proposed effort to overcome any delays incurred.
11. Should any work not be started or completed within five (5) days of the stated scheduled date, the Construction Manger shall have the right to order the Contractor to expedite start and completion of the work by whatever means the Construction Manager deems appropriate and necessary, without additional compensation to the Contractor.
12. Should any work to ten (10) or more days behind schedule, the Construction Manger shall have the right to perform the work or have the work performed by whatever method the Construction Manager deem appropriate.

13. Costs incurred by the Construction Manager in connection with “maintaining the Construction Schedule” under this section shall be reimbursed to the Construction Manager by the Contractor.
14. It is expressly understood and agreed that failure by the Construction Manager to exercise the option to either order the Contractor to expedite work, or to expedite the work by other means, shall not be considered precedent-setting for any other activities.
15. The following Construction Schedule is critical to the successful completion of the Project and is an integral portion of the Construction Documents. The Construction Schedule may vary in accordance with the construction conditions. The Contractor shall delay or expedite his material and equipment deliveries and modify the required work forces to accommodate these varying conditions. The attached schedule is a milestone schedule with durations that portions of the project must be completed in. A more detailed construction schedule will be generated after all contracts have been awarded. By submitting a bid, each Contractor is acknowledging that they can complete this work within the durations outlined in the milestone schedule.
16. The schedule is of the essence on this project and each Contractor is responsible for completion of its work in coordination with the work of all other Contractors within the required sequence and time frame so that the established schedule is met. Each Contractor agrees to provide sufficient labor crew size, equipment and/or work overtime, weekends, or shiftwork as necessary to meet the activity durations on this schedule.
17. The attached schedule includes “estimated” start dates for the construction activities. In the interest of the overall project, CM reserves the right to alter the sequencing of activities in order to accommodate project conditions and/or Owner requirements. It is understood that the Contractor shall be obligated to complete its activities within the specified duration regardless of the actual start date.
18. All submittals and shop drawings must be submitted within a minimum of **two (2) weeks** of the notice to proceed with this Contract, or the dates indicated on the schedule or scope of work, whichever occurs first. All expediting of materials and equipment to meet this schedule is the responsibility of the Contractor. Contractor to pay for any quick ship charges if necessary.
19. All critical path materials such as storm water structures, rebar, steel, brick, door frames, electrical gear and lighting, mechanical equipment and ductwork, roofing material, kitchen equipment, etc., must be expedited from the beginning of the project. Delays in critical path materials will not be accepted.
20. All work, or applicable portions of the work, shall be sufficiently complete for Owner’s use and occupancy and all required approvals and permits for use and occupancy shall have been issued by the appropriate authorities by the established “Date of Substantial Completion” of the work, or applicable portion thereof.
21. All punchlist work and project closeout documentation shall be completed and approved by the Owner and Architect by the “Date of Final Completion” which shall be no later than 21 days after the Date of Substantial Completion. Any uncompleted punchlist items after this date will be completed by the Construction Manager and back charged to the appropriate Contractor or vendor. Final invoices will not be processed until final completion of the work and certification of same by the Owner and Architect.
22. If a Contractor misses any portion of a workday due to weather, manpower, or scheduling conflicts, they must make-up this lost time during the same week.

23. Sundays are not regular work days. Approval must be obtained from the Construction Manager prior to working. It is expected that contractors will work Saturdays, Sundays, and overtime when days are lost during the week.
24. Failure to properly man the project during normal week days may result in charges for CM supervision on weekends, at the discretion of the CM.
25. The Contractor must schedule their work forces to work on all available work at a given time. Therefore, if an area of the building is ready for the Contractor's work to begin or continue, the Contractor must have manpower onsite working. Contractors will not have the "entire" work area at one time.
26. Each Contractor must request information or clarifications in a timely manner, at least two weeks prior to needing the information, so that the time required to receive the clarification does not impact the work. No delays will be accepted related to this issue.
27. Each Contractor is required to include in their bid the necessary overtime costs if they are needed to meet the schedule durations in this section.

#### 2.1 Time of Completion

1. The Contractor shall commence work upon receipt of a Letter of Authorization to proceed from either the Owner or the Construction Manager.
2. All work shall be 100 percent (100%) complete and sequenced per the attached schedule unless agreed upon by the Construction Manager prior to the executing of the contract.
3. Work can be completed on Saturdays and Sundays and at extended hours during the week. The Owner shall not be responsible for additional costs for overtime. The Contractor(s) working on Saturdays and Sundays shall bear any additional costs for the CM to be onsite during these days. If multiple Contractors are working, the CM costs shall be split evenly between them. Saturdays and Sundays shall only be used as make-up days if Contractor fails to meet the Project Schedule and/or as deemed necessary by the CM.
4. Normal work hours shall be from 7:00 a.m. to 3:30 p.m., Monday to Friday, and 7:00 a.m. to 3:30 pm on Saturday, when applicable. Work may be completed beyond these hours, as approved by the Construction Manager.
5. Weather Delays: The project substantial completion date, shall only be adjusted due to weather conditions if there are delays above and beyond the following "Adverse Day" allowances based on a seven day work week:
  - A. January (12), February (10), March (5), April (5), May (4), June (2), July (4), August (3 days), September (4 days), October (3 days), November (2 days), and December (6 days). These "Adverse Days" are based on the following reference: State of Delaware Department of Transportation's Standard: "763508 Project Control System."
  - B. Delays requested due to weather must be related to the critical path activity as indicated on the Contractor's Project Schedule.
  - C. Delays due to weather must be reported by the contractor on the day they occur in a written report.
  - D. Any day lost during the week must be made up the same week by overtime and /or weekend work. If the weather prevents work from being completed on the make-up day, the lost day must be made up the following week.
  - E. The allowance days listed above carry over to the next month if they are not used. Therefore, if only 1 allowance day is used in November, there are (7) days in December. Therefore, there is a total of 60 allowance days in a year.

END OF SECTION 01780

(SCHEDULE ATTACHED)

Activity ID	Description	Remaining Duration	Early Start	Early Finish	2013			2014												2015					
					OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN

**01 - CONSTRUCTION MANAGER**

1050	Subcontractor Bidding	30	10OCT13	20NOV13
1051	Scope Review Meetings	10	21NOV13	04DEC13
1052	Owner Approval	5	05DEC13	11DEC13
1053	Award Contracts	5	12DEC13	18DEC13
1063	General Trades Submittals	30	19DEC13	30JAN14
1411	DNREC Preconstruction Meeting	1	20DEC13 *	20DEC13
2000	Mobilize Field Office	5	02JAN14 *	08JAN14
1060	SPRING EXAMS - NO OUTSIDE WORK	6	02MAY14 *	09MAY14
1090	COMMENCEMENT - SITE CLOSED	1	09MAY14 *	09MAY14
1121	Wall Close-in Inspection - 3rd Floor	5	10SEP14	16SEP14
1122	Wall Close-in Inspection - 2nd Floor	5	17SEP14	23SEP14
1101	Wall Close-in Inspection - 1st Floor	5	24SEP14	30SEP14
1021	Ceiling Close-in Inspection - 3rd Floor	5	04DEC14	10DEC14
1080	FALL EXAMS - NO OUTSIDE WORK	6	05DEC14 *	12DEC14
1011	Ceiling Close-in Inspection - 2nd Floor	5	18DEC14	24DEC14
1001	Ceiling Close-in Inspection - 1st Floor	5	05JAN15	09JAN15
1096	FINAL INSPECTIONS	20	06APR15	01MAY15
1097	PUNCHLIST	20	06APR15	01MAY15
1070	SPRING EXAMS - NO OUTSIDE WORK	6	01MAY15 *	08MAY15
1107	SUBSTANTIAL COMPLETION	0		01MAY15
1100	COMMENCEMENT - SITE CLOSED	2	08MAY15 *	11MAY15

**02 - SITE WORK**

2011	Site Submittals	20	19DEC13	16JAN14
2010	Install Site Fence & Protect Existing Utilities	3	09JAN14	13JAN14
2020	Install E&S Controls	10	14JAN14	27JAN14
2030	DNREC Approval	1	28JAN14	28JAN14
2410	Demo Select Site Utilities	10	28JAN14	10FEB14
2411	Site Utilities - Water/Sewer/Gas	15	28JAN14	17FEB14
2040	Bulk Grading/Establish Building Pad	10	29JAN14	11FEB14



Start date	01OCT13
Finish date	11MAY15
Data date	10OCT13
Run date	15NOV13
Page number	1A
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The Whiting-Turner Contracting Co.

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## SECTION 01790 – SPECIAL PROJECT PROCEDURES

### 1.0 PROCEDURES

#### A. CONSTRUCTION MANAGER

The Construction Manager shall control, enforce, direct, instruct, and otherwise implement regulations and restrictions as set forth in this section.

#### B. OWNER'S REPRESENTATIVE

All communications with the owner and owner's representative(s) and consultant(s) shall be thru the Construction Manager unless otherwise noted in the General Conditions.

#### C. NOISE CONTROL

1. The Contractor shall execute the Work in this Contract as quietly as practicable to avoid unnecessary disturbances.
2. Any complaints duly registered by the Construction Manager of unacceptable noise levels shall be cause for the use of special precautions and methods of operation by the Contractor to reduce noise to acceptable levels.
3. The Owner and Construction Manager shall be the sole judge of the tolerability of noise levels.
4. Use of portable radios or tape recorders will not be allowed on the premises other than two-way communication radios.
5. The Contractor shall prepare a "Noise Schedule" as soon as practicable indicated the type of noise inducing work showing the dates, times and duration of such work. The Contractor should note any special instruction and/or time requirement in Scopes of Work.

#### D. PERSONNEL IDENTIFICATION

1. All employees of the Contractor and all Subcontractors shall be required to wear numbered identification badges while on the premises of existing buildings.
2. The identification badges shall be conspicuously fixed to outer garments above elbow level.
3. Any of the Contractor's personnel or Subcontractor's personnel who do not comply with this requirement at all times will be denied access to the facility or will be escorted off the premises by Security Guards or owner representative(s).

#### E. PERSONNEL PARKING

1. At no time shall the employees of the Contractor or Subcontractor employed by Contractor be allowed to park their vehicles on-site without prior approval from the Construction Manager.

## 2.0 LIMIT OF OPERATIONS

- A. It shall be noted that, adjacent streets will remain open throughout the duration of this Project. The Construction Manager will provide a perimeter fence, which will establish limits of operation.
- B. The Contractor's normal limit of operations shall be confined within the Limits of Work Area as designated on the drawings.
- C. The Owner, Architect, and other Contractors performing Work within these limits of operation, shall be allowed access at all times.
- D. Construction operations must be planned and executed in a manner which allows emergency access to project.

## 3.0 SCHEDULING AND COORDINATION

### A. SCHEDULING

All arrangements for work which will involve interference with normal Owner or adjacent properties functions, particularly in occupied areas, or adjacent thereto, shall be scheduled a minimum of 14 days in advance with the Construction Manager to provide for minimum of disruption and inconvenience.

### B. OUTAGES

1. Utility and service outages shall be kept to a minimum, and will be permitted only with written approval of the Construction Manager and the Owner.
2. All requests for the outages shall be made a minimum of fourteen working days in advance of their need.
3. Requests for outages will not be considered unless they include an identification of all areas which will be affected by the proposed outage. Blank outage forms will be provided by the Construction Manager upon request.
4. All outages shall occur **after normal working hours**. All costs including premium time shall be included in the Bid amounts.

END OF SECTION 01790

## SECTION 01800 – SAFETY REQUIREMENTS AND LOSS CONTROL

The major goal of the Loss Control Program is to prevent losses. Prevention of accidents and elimination of hazards will, in turn, prevent pain, suffering and direct loss in terms of dollars. A safe work place must be maintained for all employees and visitors. High quality work standards and on-time performance are facilitated by an effective Loss Control Program.

Controlling conditions which result in losses is the responsibility of all parties. The Construction Manager will designate a job site safety officer responsible for program management. The responsibility for program implementation is the responsibility of all employees of the Owner, Construction Manager, Contractors and all Subcontractors. The following summary identifies objectives requiring a firm commitment to insure a continuing and comprehensive Loss Control Program.

### Construction Manager Duties:

1. Designate jobsite safety officer
2. Loss reporting and summaries
3. Accident investigation
4. Establish project procedures
5. Inspections, notifications and follow-up
6. Weekly "Tool Box" talks
7. Weekly Superintendents meetings
8. Monthly summary report

### Contractors Duties:

1. Designate on-site safety representative
2. Consult with insurance carrier for construction operations
3. Involve foreman and employees
4. Safety training of all employees
5. Adherence to safety standards, rules and government regulations
6. Report conditions or practices which might cause injury or damage
7. Report all safety related incidents
8. Participate in all accident investigations
9. All employees attend weekly Tool Box talks
10. Attend weekly Superintendents/Foreman's Meetings
11. Request permission to move barricades and floor opening protection \*
12. Maintain fire watch for all burning operations \*
13. Properly store and protect hazardous chemicals and flammable substances
14. Insure performance of these duties by subcontractors
15. Maintain good housekeeping practices
16. Prohibit the use of drugs and/or intoxicating beverages
17. Maintain equipment in safe condition

\* See the Whiting-Turner Forms for these issues in the On-Site Safety Orientation Package

In order for our accident prevention program to be effective, management at all levels must personally take a serious interest in the prevention of accidents. They must also provide the leadership to which supervisory personnel and employees will respond by developing a positive safety attitude.

THE WHITING-TURNER CONTRACTING COMPANY  
SAFETY/HARASSMENT POLICY

I. SAFETY REQUIREMENTS

The Contractor agrees to fully comply with all applicable standards of the Occupational Safety and Health Administration, all safety codes, laws or ordinances applicable to any public authority and to ensure that its employees and Sub-Contractors abide by the same regulations. The Contractor further agrees that if so ordered by the Whiting-Turner Project Manager or Superintendent, it will immediately stop work and correct any serious safety violations immediately before resuming work. The Contractor expressly agrees and understands that Contractor shall be solely responsible for the safety conditions of its work areas and working forces.

The Contractor further agrees to comply with the following specific safety rules of Whiting-Turner which shall in no way limit the Contractor's liability for safety.

Each Contractor and their Subcontractors are to designate a safety representative, in writing, and provide a written safety program which identifies their organization and safety policies. All contractors are required to review the following rules and requirements with their on site employees:

CONTAINERS

- A. No glass containers allowed on site

CRANES

- A. All lifts must use tag lines
- B. No open hooks used on lifts

EQUIPMENT

- A. Absolutely no riding on equipment not equipped with proper seating
- B. Site Speed not to exceed 10 MPH

FIRE CONTROL

- A. No open fires, fire barrels, or hot boxes
- B. Fire extinguishers:
  - Trailers/offices            minimum 10 lb ABC
  - Equipment                minimum 5 lb ABC
  - Fire Watch                minimum 20 lb ABC

HARDHATS

- A. Wear on site at all times, must have Z89.1 rating
- B. No metal hardhats or bump caps authorized

FOOT PROTECTION

- A. Substantial leather boots required
- B. Loafers, sandals, tennis shoes (including steel toe type) are not allowed

#### LADDERS

- A. No metal ladders allowed on site
- B. Damaged ladders must be immediately removed from site or destroyed

#### SCAFFOLDING

Full handrails, mid-rails, toeboards, full decking required on all scaffolds, according to standards

#### SIGNAGE

- A. Post safety or hazard signs (bilingual if necessary)
- B. Use Whiting-Turner Supplied (Do Not Remove) signs on floor openings

#### TRUCKS

- A. No more than three (3) persons in cab of truck
- B. No riding in back of truck unless truck is equipped with seats and safety belts

#### WORK CLOTHING

- A. Reflective vests, shirts, sweatshirts or jackets must be worn at ALL times.
- B. Safety glasses must be worn at ALL times.
- C. All shirts must have a minimum four (4) inches sleeve length over shoulders
- D. No shorts, cut offs, tank tops, net shirts, etc.

#### ELECTRICAL PROTECTION

- A. No cut, frayed or damaged extension cords permitted
- B. All extension cords must have a U.L. approved GFCI (Ground Fault Circuit Interpreter)

#### SAFETY ORIENTATION / SAFETY MEETINGS

- A. Each employee is required to attend a safety orientation and wear a sticker on his or her hardhat
- B. Each Foreman is required to hold weekly safety meetings with their employees and forward copies of the sign-in sheet

#### DAILY REPORTS

- A. Foremen are required to turn in a daily report for their work at the end of each workday. All employees are required to sign this sheet

#### PARKING

- A. Parking is limited on site – Coordinate with WT Superintendent for locations
- B. NO PARKING at the adjacent properties or roadways or any property not owned by the project owner

- C. Do not block handicap spaces or fire lanes
- D. Obtain necessary parking permits if applicable

#### PERMITS

- A. HOT WORK Permit must be filled out for any burning, welding, soldering, cutting, etc. that may generate a spark.
- B. SAFE WORK Permit must be filled out for any other potentially dangerous work. Crane lifts, shaft cutting, hazardous chemicals, off-hour work, etc. If work occurs in an OSHA defined confined space, obtain a confined space permit.
- C. SAFETY BARRICADE / FALL PROTECTION Permit must be filled out when creating an open hole or removing fall protection.
- D. UTILITY SHUTDOWN Permit must be filled out when turning off any utilities to the building. A two-week notice is required for all outages.
- E. ALL PERMITS must be filled out with Whiting-Turner in advance and posted in the work area.

#### ASBESTOS / HAZARDOUS MATERIALS

- A. It is possible that there could be existing unforeseen asbestos or other hazardous materials either buried underground or laying on the project site from previous activities on the property.
- B. It is possible that a hazardous material could be brought to the site by others.
- C. Anyone who uncovers or notices a suspected hazardous material should leave it undisturbed and notify WT immediately.
- D. An authorized contractor must dispose of asbestos or other hazardous materials or contaminated debris.

#### MISCELLANEOUS RULES

- A. Do not block any hallways, stairs or exit doors. Maintain fire egress.
- B. Use all proper personal protection equipment (hard hats, gloves, glasses, etc.)
- C. Smoking is prohibited at all times within the building (new building construction). For renovation projects, smoking is prohibited at all times inside the building, on the roof, or within 20' of the building. Violators will be warned in writing one time. Written warning will be copied to their office. The second violation will result in removal from project. Designated smoking areas will be established outside of the building.
- D. Eat in designated areas only. All trash must be disposed in trash containers. NO EXCEPTIONS.
- E. Use temporary toilets only
- F. Clean the work site daily, trash and debris to the dumpster daily
- G. Alert WT to any emergency
- H. Report any damage to building components or site items
- I. No gasoline-powered or carbon monoxide exhaust equipment can be used at any time in the building after it is enclosed, use propane instead. All equipment you plan to use must be reviewed with the WT Superintendent for safety concerns.

NOTE: THESE ABOVE SAFETY RULES ARE IN ADDITION TO OSHA REQUIREMENTS.

#### II. CONTRACTOR'S SAFETY PROGRAM

The Contractor will provide a competent safety person who will be responsible for administering the Contractor's safety program and enforcing the safety rules. The following are recommended suggestions for establishing an effective Contractor's safety program.

- A. Establish a schedule of safety meetings conducted by Contractor's foreman for discussing specific topics, such as safety rules, hazards or specific jobs, safe practices, etc.
- B. Establish a plan for Contractor's foreman to contact each employee under his supervision at least once per week on safety
- C. Establish a procedure for the prompt investigation of all personal injuries and property damage by Contractor's management
- D. Establish a schedule for periodic inspection by Contractor's management of "hazards" on job site
- E. Establish a plan for the periodic inspection of tools and equipment by Contractor's management
- F. Develop basic safety rules for job, instruct employees and enforced compliance

### III. INDEMNIFICATION (RELATED TO OSHA VIOLATIONS)

To the fullest extent permitted by law the Contractor shall indemnify and hold harmless Whiting-Turner, the Owner, and the Architect and their agents and employees from and against all claims, including citations and penalties imposed by the Occupational Safety and Health Administration, damages, losses, expenses and judgments including, but not limited to attorney's fees, arising out of or resulting from performance of the work in an area which is unsafe, harmful, dangerous, or hazardous and which is caused in whole or in part by any act of omission of the Contractor, anyone directly or indirectly employed by it, or any one for whose acts it may be liable, regardless of whether the claim, citation, penalty, damage, loss, expense or judgment results from unsafe, harmful, dangerous, hazardous or toxic materials or substances or whether from any other unsafe, harmful, dangerous or hazardous conditions.

### IV. SEXUAL HARASSMENT POLICY

The Construction Manager and Owner will not accept any behavior deemed to be a form of sexual harassment and actively seeks to eliminate such behavior from the jobsite environment.

#### Definition of Sexual Harassment

The Construction Manager and Owner officially defines sexual harassment as "any unwelcome sexual advances or requests for sexual favors and other verbal or physical conduct of a sexual nature that has the effect or purpose of unreasonably interfering with an individual's work or academic environment, or of affecting an individual's employment or academic status." Sexual harassment is not only a clear violation, it is illegal and a form of discrimination, covered under Title VII of the Civil Rights Act of 1964.

#### Be Aware

Sexual harassment takes many forms, but includes any unwanted sexual attention such as:

- staring, leering, and ogling
- sexual teasing
- jokes and gestures
- repeatedly asking for dates after being refused
- lewd remarks
- whistles
- references to someone's anatomy
- inappropriate touching
- attempts to kiss or fondle

- coerced sexual intercourse

The sexual harassment policy will be strictly enforced. Any reported incident will be dealt with swiftly and severely. The offending party, if identified will be dismissed from the project and property and not allowed to return. Repeated incidents by employees of a particular firm can result in cancellation of that contract. The victim of the abuse retains the legal right to prosecute. All employees of these contracting firms should be apprised of this policy before working on this project.

END OF SECTION 01800

## SECTION 01820 – CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures
  - 2. Warranties
  - 3. Final cleaning
- B. See Division 01 – Section 01750 – Payment Procedures and Section 01825 – Closeout Documents Required for requirements for Applications for Payment for Substantial and Final Completion.
- C. See Division 01 – Section 01835 – Project Closeout Documentation for submitting Record Drawings, Record Specifications, and Record Product Data.
- D. See Division 01 – Section 01835 – Project Closeout Documentation for operation and maintenance manual requirements.
- E. See Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
- F. See Division 01 – Section 01835 – General Commissioning Requirements for commissioning requirements.
- G. See Divisions 2 through 17 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

#### 1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.

6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  7. Make final changeover of permanent locks. Advise Owner's personnel of changeover in security provisions.
  8. Complete startup testing of systems.
  9. Submit test/adjust/balance records.
  10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  11. Advise Owner of changeover in heat and other utilities.
  12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  13. Complete final cleaning requirements, including touchup painting.
  14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Construction Manager and Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

### 1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 – Section 01825 – Closeout Documents Required.
  2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report and warranty.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A or approved comparable form.
  1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

#### 1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.
- D. Provide all warranty and closeout documentation in electronic format.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - h. Sweep concrete floors broom clean in unoccupied spaces.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - k. Remove labels that are not permanent.
    - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
    - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    - n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

- o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare and submit a report to the CM.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01820

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SECTION 01825 – CLOSEOUT DOCUMENTS REQUIRED

1. The following documents are included in this section:
  - A. Contractors Partial Release of Lien (to be submitted with each invoice)
  - B. Partial Release of Lien – 2<sup>nd</sup> tier subcontractors and suppliers (to be submitted by every subcontractor and supplier when the contract is 50% billed)
  - C. Contractors Final Release of Lien (to be submitted with final invoice)
  - D. Final Release of Lien – 2<sup>nd</sup> tier subcontractors and suppliers (to be submitted by every subcontractor and supplier prior to or with final invoice)
  - E. Affidavit Taxes have been paid. (to be submitted prior to or with final invoice)
  - F. Guarantee and Warranty (to be submitted prior to or with final invoice)
  - G. AIA Document G706, Contractors Affidavit of Payment of Debts and Claims (to be submitted prior to or with final invoice)
  - H. AIA Document G706A, Contractors Affidavit of Release of Liens (to be submitted prior to or with final invoice)
  - I. AIA Document G707, Consent of Surety to Final Payment (to be submitted prior to or with final invoice)

END OF SECTION 01825

(ATTACHMENTS FOLLOW)

**CONTRACTOR’S PARTIAL RELEASE,  
 WAIVER OF LIEN AND AFFIDAVIT**

**TO:** Delaware State University  
1200 N. DuPont Highway  
Dover, DE 19901

**RE:** DSU – OSCAR Building No.:  
**CM:** Whiting-Turner Contracting Company  
**PROJECT:** DSU – OSCAR Building  
**CURRENT INVOICE NO.:** \_\_\_\_\_  
**FOR THE PERIOD ENDING:** \_\_\_\_\_

The undersigned Contractor, in consideration of the payments previously made and payment for the period covered by the current invoice set forth above, hereby waives and releases all mechanic’s, materialman’s or other liens and, to the fullest extent permitted by law, all rights to file any such liens in the future, and all claims and demands against Owner, Construction Manager, and the real property on which the project is located, in any manner arising out of work, labor, services, equipment or materials, performed or furnished by Contractor, its subcontractors and suppliers, in connection with the Project and trade contract, through the period covered by the current invoice and all previous invoices. The release does not apply to retention, nor to extra work which Contractor has been authorized to proceed with by the Construction Manager, but for which payment has not yet been approved.

Except as noted below, Contractor acknowledges and represents that for the period and work covered by all previous invoices for which Contractor has received payment:

1. Contractor has paid in full all amounts for subcontracts, labor, materials and rented equipment.
2. Contractor has properly applied previous payments to pay all outstanding invoices related to the Project.
3. Contractor is aware of no claims nor any circumstances that could give rise to any future claims against Owner, Construction Manager, Architect or other Trade Contractor on the Project.
4. All payroll, withholding, sales and other taxes, union benefits, insurance premiums and any other amount required by law, regulation or agreement to be paid in connection with labor, materials, and equipment for the Project have been paid in full.

List exceptions, if any:

Contractor represents that the amounts set forth below are correct and that the amount of the current payment due will be applied promptly to full payment of all outstanding amounts due from Contractor to others in connection with the Project.

Contract Sum to Date	\$ _____
Total Completed and Stored to Date	\$ _____
Total Retention to Date	\$ _____
Total Earned Less Retention	\$ _____
Less Previous Payments	\$ _____
Current Payment Due	\$ _____

**BY:** \_\_\_\_\_  
*(Name of Subcontractor)*

**BY:** \_\_\_\_\_  
*(Signature, Printed Name and Title), Duly Authorized Agent of Subcontractor*

STATE OF \_\_\_\_\_ )  
 (CITY)(COUNTY)OF \_\_\_\_\_ ) to wit:

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, appeared before me \_\_\_\_\_ and he/she made oath in due form of law that the facts, information and representations set forth in the foregoing Trade Contractor’s Partial Release, Waiver of lien and Affidavit, are true and accurate to the best of his/her knowledge, information and belief.

\_\_\_\_\_  
*Notary Public*

My commission expires: \_\_\_\_\_

**PARTIAL WAIVER AND RELEASE  
FOR SECOND TIER SUBCONTRACTORS AND SUPPLIERS**

TO: Delaware State University(Owner)

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

CONSTRUCTION MANAGER: The Whiting-Turner Contracting Co.

PROJECT: Optical Science Center for Applied Research (OSCAR)

CONTRACTOR: \_\_\_\_\_

The undersigned Company, a subcontractor or supplier to the Trade Contractor named above, and hereinafter referred to as the "Company", in consideration of payments previously received and in consideration of payment for work performed through the current date set forth below, hereby waives and releases all mechanics', materialman's, or other liens and, to the fullest extent permitted by law, all rights to file any such liens in the future, and all claims and demands against the Owner, the Construction Manager and the real property on which the Project is located, and any claims arising out of work, labor, services, equipment or materials, performed or furnished by the Company, its subcontractors and suppliers, in connection with the Project, through the period covered by the current invoice.

Except as noted below, the Company further acknowledges and represents that all persons and entities which have provided labor or material, or rented equipment, for or through the Company in connection with the project have been paid in full, for the periods covered by previous payments, that previous payments to the Company have been properly applied to pay all outstanding invoices relating to the Project, that the Company is not aware of any claims, or circumstances which could give rise to future claims, against the Owner, the Construction Manager or the Project, and that all payroll, withholding and other taxes, union benefits, insurance premiums or other amounts required by law, regulation or agreement to be paid in connection with labor for the project have been paid in full through the last date of work covered by the current invoice.

List exceptions, if any:

Last date of work period covered by current Invoice: \_\_\_\_\_

\_\_\_\_\_  
(Name of Company)

BY: \_\_\_\_\_  
Signature, Duly Authorized Agent of Company

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

\_\_\_\_\_  
Printed Name and Title

STATE OF \_\_\_\_\_ )  
(CITY)(COUNTY)OF \_\_\_\_\_ )

)to wit:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, appeared before me \_\_\_\_\_ and he/she made oath in due form of law that the facts, information and representations set forth in the foregoing Company's Partial Waiver and Release, are true and accurate to the best of his/her knowledge, information and belief.

\_\_\_\_\_  
(Notary Public)

My commission expires: \_\_\_\_\_

**CONTRACTOR'S FINAL RELEASE AND AFFIDAVIT**

**TO:** Delaware State University(OWNER)  
1200 N. DuPont Highway  
Dover, DE 19901

**DATE:** \_\_\_\_\_

**FROM:** \_\_\_\_\_ (Contractor)

**RE:** \_\_\_\_\_ **DATED:** \_\_\_\_\_

CONSTRUCTION MANAGER: The Whiting-Turner Contracting Company

PROJECT: Optical Science Center for Applied Research (OSCAR)

The undersigned Trade Contractor, in consideration of final payment as set forth herein, hereby waives all mechanic's liens and rights to file mechanic's liens and generally releases, and agrees to indemnify and save harmless, the above Owner, the construction manager, their successors and assigns, from all causes of action, suits, debts, contracts, damages, judgments, decrees, claims, demands, liens, rights to assert liens, awards and expenses, including attorneys' fees, in law, equity or otherwise, which Trade Contractor, its subcontractors and suppliers, their successors and assigns and any persons claiming through them or based upon their acts or omissions ever had, now have or hereafter may have against the above Owner, the construction manager, and any real property or improvements of Owner, from the beginning of the world to the date of this Release, in any manner relating to or arising in connection with the above referenced contract or project.

Trade Contractor represents that the amounts set forth below are correct and that the amount of the current payment due will promptly be applied to full payment of all outstanding amounts due from Trade Contractor to others in connection with the Project.

Final Contract Amount	\$ _____
Less Previous Payments	\$ _____
Final Payment Due	\$ _____

I hereby certify, under penalties of perjury, that the information and representations set forth above are true and accurate to the best of my knowledge, information and belief.

\_\_\_\_\_  
*Contractor*

**BY:** \_\_\_\_\_  
*Signature, Duly Authorized Agent of Contractor*

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

\_\_\_\_\_  
*Printed Name and Title*

STATE OF \_\_\_\_\_ )  
(CITY)(COUNTY)OF \_\_\_\_\_ ) to wit:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, appeared before me \_\_\_\_\_ and he/she made oath in due form of law that the facts, information and representations set forth in the foregoing Contractor's Final Release and Affidavit, are true and accurate to the best of his/her knowledge, information and belief.

\_\_\_\_\_  
*(Notary Public)*

My commission expires: \_\_\_\_\_

**FINAL WAIVER AND RELEASE  
FOR SECOND TIER SUBCONTRACTORS AND SUPPLIERS**

OWNER: Delaware State University

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

CONSTRUCTION MANAGER: The Whiting-Turner Contracting Company

PROJECT: Optical Science Center for Applied Research (OSCAR)

CONTRACTOR: \_\_\_\_\_

The undersigned Company, a subcontractor or supplier to the contractor named above, and hereinafter referred to as the "Company", in consideration of payments previously received and in consideration of final payment set forth below, hereby waives and releases all mechanics', materialman's, or other liens and, to the fullest extent permitted by law, all rights to file any such liens in the future, and all claims and demands against the Owner, the Construction Manager and the real property on which the Project is located, and any claims arising out of work, labor, services, equipment or materials, performed or furnished by the Company, its subcontractors and suppliers, in connection with the Project, from the beginning of the world to the date of this Waiver and Release.

Except as noted below, the Company further acknowledges and represents that all persons and entities which have provided labor or material, or rented equipment, for or through the Company in connection with the project have been paid in full, that previous payments to the Company have been properly applied to pay all outstanding invoices relating to the project, that the Company is not aware of any claims, or circumstances which could give rise to future claims, against the Owner, the Construction Manager or the Project, and that all payroll, withholding and other taxes, union benefits, insurance premiums or other amounts required by law, regulation or agreement to be paid in connection with labor for the project have been paid in full.

Final Payment Due: \$ \_\_\_\_\_

\_\_\_\_\_  
*(Name of Company)*

BY: \_\_\_\_\_  
*Signature, Duly Authorized Agent of Company*

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

\_\_\_\_\_  
*Printed Name and Title*

STATE OF \_\_\_\_\_ )  
(CITY)(COUNTY)OF \_\_\_\_\_ )

)to wit:

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, appeared before me \_\_\_\_\_ and he/she made oath in due form of law that the facts, information and representations set forth in the foregoing Company's Final Waiver and Release, are true and accurate to the best of his/her knowledge, information and belief.

\_\_\_\_\_  
*(Notary Public)*

My commission expires: \_\_\_\_\_

**AFFIDAVIT THAT ALL TAXES HAVE BEEN PAID**

RE: Optical Science Center for Applied Research

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

TO: DELAWARE STATE UNIVERSITY  
1200 N. DUPONT HIGHWAY  
DOVER, DE 19901

The undersigned certifies that all federal, state and local taxes (including sales, consumer, use and excise taxes) applicable to the work and services performed and materials and equipment incorporated into the work, in each case pursuant to the contract referred to above, have been paid in full.

SUPPLIER/CONTRACTOR: \_\_\_\_\_

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

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

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

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me personally came \_\_\_\_\_  
\_\_\_\_\_, to me known who, being by me duly sworn, did depose and say that  
he resides at \_\_\_\_\_ that  
he is \_\_\_\_\_ of \_\_\_\_\_  
the corporation that executed the foregoing instrument and that he signed his name thereto by order of the Board of  
Directors of said corporation.

\_\_\_\_\_  
(Notary Public)

My Commission Expires: \_\_\_\_\_

### GUARANTEE AND WARRANTY

WHEREAS, \_\_\_\_\_, hereinafter called the "Guarantor," entered into a contract dated \_\_\_\_\_, hereinafter called the "Contract," with the Delaware State University, hereinafter called the Owner, for the construction of the Optical Science Center for Applied Research (hereinafter referred to as the "Work"), located at 1200 N. DuPont Highway, Dover, Delaware 19901.

WHEREAS, the Owner has performed, kept, observed and fulfilled each and every one of the obligations, promises, stipulated, terms and conditions on its part, and

WHEREAS, by the terms of the Contract, one of the conditions precedent to the making of final payment is the execution and delivery by the Grantor of this guarantee and warranty; and

WHEREAS, the Guarantor is now desirous of obtaining payment pursuant to the terms of said Contract and as a condition precedent to such payment, furnishes this separate guarantee and warranty for all work and material included in said Contract,

NOW THEREFORE, in consideration of the premises and of the payments made to the Guarantor under said Contract and in further consideration of final payment, the Guarantor does hereby for itself and its successors, heirs and assigns, guarantee and warrant to the Owner, its successors and assigns, that the Guarantor has performed all the work required by said Contract in accordance with the terms thereof including but not limited to satisfactory operation of all equipment by means or acceptance tests, correction of items on punchlists prepared by the Architect, and that all portions of the work completed under the Contract are perfect as to materials and workmanship and will so remain from \_\_\_\_\_ for a period of one (1) year; and

The Guarantor does hereby further guarantee and warrant that the Guarantor will make good and replace at its own cost and expense all defects in material and workmanship appearing during the period aforesaid and the Guarantor will be responsible for all damage caused to the Owner by such defects or by the work required to remedy such defects. All corrections to material and workmanship shall be made at the convenience of the Owner and shall be performed in a good workmanlike manner.

The Guarantor does hereby warrant and represent that it has obtained warranties and guarantees from its material and equipment suppliers and from its subcontractors to the fullest extent possible and as customary in the various trades and has delivered all assignable warranties and guarantees to the Owner.

It is understood that this guarantee shall in no way be construed to limit in any manner any of the provisions of the Contract or to modify or limit any of the obligations, liabilities and duties of the Guarantor thereunder.

It is further understood that his guarantee shall remain binding and irrevocable during the above stated period and that the Guarantor shall not contest the validity of, or in any way attempt to revoke or withdraw from, this guarantee for any cause whatsoever, whatever arising before or after the execution of the Contract or this guarantee.

IN WITNESS WHEREOF, the Guarantor has caused this instrument to be signed and executed this  
\_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
(GUARANTOR)

WITNESS:

BY: \_\_\_\_\_

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

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, before me personally came  
\_\_\_\_\_, to me known who, being by me duly sworn, did depose and say that he resides at  
\_\_\_\_\_, that he is \_\_\_\_\_ of \_\_\_\_\_, the corporation that  
executed the foregoing instrument and that he signed his name thereto by order of the Board of Directors  
of said corporation.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

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

## Consent Of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER:

CONTRACT FOR: General Construction

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT DATED:

CONTRACTOR:

SURETY:

OTHER:

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

, SURETY,

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

, 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)*

, OWNER,

as set forth in said Surety's bond.

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

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

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

Attest:  
*(Seal):*

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

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

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

PROJECT: (Name and address)

ARCHITECT'S PROJECT NUMBER:

TO OWNER: (Name and address)

CONTRACT FOR: 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:

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

## Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

CONTRACT FOR: General  
Construction

CONTRACT DATED:

TO OWNER: *(Name and address)*

OWNER:

ARCHITECT:

CONTRACTOR:

SURETY:

OTHER:

STATE OF:  
COUNTY OF:

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

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

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

CONTRACTOR: *(Name and address)*

BY:

*(Signature of authorized representative)*

*(Printed name and title)*

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

## 01830 - CLOSEOUT REQUIREMENTS - MECHANICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section describes project closeout requirements.

### PART 2 - TESTS AND ADJUSTMENTS

#### 2.1 GENERAL OPERATIONS TEST

- A. Prior to balancing each system, demonstrate to the Owner that strainers, flush valves and controlling devices are clean.
- B. Test capacity of air equipment with clean air filters. Before making final test, replace all filters. After final test, place filters in clean operating condition. Replace throwaway type filters that have been used in final test.
- C. Conduct test in the presence of the Owner. Tests shall demonstrate that equipment is functioning in accordance with specifications.
- D. After capacity tests have been made, and approved, operate system for at least five days to demonstrate satisfactory functional and operating efficiency

### PART 3 - REPORTS

#### 3.1 OBSERVATION AND ACCEPTANCE PROCEDURE

- A. Pressure lubricate bearings except those requiring oil lubrication. Lubrication points shall be readily accessible. Pressure grease lubrication fittings shall be "Zerk-Hydraulic" type.
- B. Furnish two 25-pound containers of lubricating grease required to service equipment, and three sets of lubrication charts or schedules for each piece of equipment or machinery. Charts or schedules shall designate each point of lubrication.

#### 3.2 SUBMISSION OF RECORD DRAWINGS

- A. After completion of work, check record drawings maintained at construction site for completeness and accuracy. Transfer information on record drawings to original of project drawing, recheck information and sign drawings, certifying that drawings accurately reflect "as-built" condition. Deliver complete set of record drawings to the Owner.
- B. The drawings shall show:
  - 1. Mechanical construction work installed exactly in accordance with original design.
  - 2. Mechanical construction work installed as modification or addition to original design.
  - 3. Dimensional information necessary to locate exact location of ductwork and piping runs which are so concealed as to be untraceable by inspection through regular means of access established for inspection and maintenance.
  - 4. Where shop drawings have been prepared and approved, record drawings shall be cross-referenced to respective shop drawings. In this case, dimensions need not be shown on record drawings.

- C. Record drawings shall include updating of equipment schedule sheets.

### 3.3 MAINTENANCE MANUALS

- A. Prepare complete maintenance manuals outlining recommended maintenance, together with, for example, oil type, frequency of inspection, belt tension adjustment, and belt part numbers, as recommended by manufacturer of equipment.
- B. Maintenance manuals shall include suggested list of spare parts, together with part numbers. Deliver five copies of required information on operation and maintenance of mechanical systems in bound printed form to Owner.
- C. Information shall cover entire installation, including frequency of inspection, cleaning, oiling, greasing, adjusting and other attention in accordance with manufacturer's recommendations.

### 3.4 OWNER'S INSTRUCTION

- A. Complete testing, adjusting and balancing prior to instruction of Owner's representatives.
- B. Instruct Owner's representatives during regular workday in operation of each mechanical system for total of 40 hours.
- C. Instructing personnel shall be thoroughly familiar with installation for which instruction is given. Furnish services of factory-trained instructors.

+ + END OF SECTION 01770+ +

SECTION 01835

PROJECT CLOSE-OUT DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements specific to the Owner for Project Close-Out Documentation, including the following:
  - 1. As-Built Documents.
  - 2. Record Documents.
  - 3. Record Product Submittals.
  - 4. Engineering Manual.
  - 5. Warranty Manual.
  - 6. Operation and Maintenance Manual.
  - 7. Attic Stock.
  - 8. Keys.
- B. Related Sections include the following:
  - 1. Division 1 section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
  - 2. Divisions 2 through 16 sections for specific Operation and Maintenance Manual requirements for products in those sections.

1.3 TERMINOLOGY

- A. The term "As-Built Drawing" shall bear one of two meanings, depending on the construction type:
  - 1. For Civil and Landscape Improvements on the project property and within the Public Right of Way, the term "As-Built Drawing" shall mean a final drawing prepared and sealed by a Registered Professional Engineer or Surveyor for submission to the Owner and any Authority Having Jurisdiction that requires sealed "As-Built Drawings" as part of the stated approval process of the Jurisdiction which illustrates the constructed condition.
  - 2. For Building Construction or Tenant Improvements, the term "As-Built Drawing" shall mean that drawing which possesses the markings (by hand or by CAD) of the installing contractor illustrating the constructed condition. The Registrant of Record is not required to seal an "As-Built Drawing".
- B. The term "Record Drawing" shall mean that drawing prepared for submission to the Owner Facilities Department by the Registrant. A "Record Drawing" is prepared in CAD and contains the Registrant's corrections to the drawings based on constructed conditions (RFI clarifications, field sketches, and scope additions/deletions) in addition to the construction markings provided by the Contractor. A "Record Drawing" will be used for facility maintenance and future project modifications.
- C. The term "Contractual Change Instrument" shall mean that document by which the scope of the project is formally changed. Common instruments include Change Orders, Construction Change Directives, Architect's Supplemental Instructions, Contract Amendments, and/or Bulletins.
- D. The term "Contractor" is used generically herein to refer to the single entity with whom the Owner has entered into Contract. Said entity may be a General Contractor, a Construction Manager, or a Design Builder.

- E. The term "Work" shall mean all of the requirements of the Contractor as defined in the Agreement.

#### 1.4 SUBMITTALS

- A. The Owner retains the right to request submittals of close-out documentation at any time in the project to audit the Contractor's preparation and maintenance efforts. Contractor's should anticipate, at a minimum, interim reviews of the close-out documentation by the Owner at the 30%, 60%, and 90% construction milestones.
- B. Submittal Timeline: The durations below are relative to the date the Certificate of Occupancy is issued (- indicates days prior to, and + means days thereafter.) Days shall mean calendar days.
1. -10 days: Civil / Landscape submission (including specially formatted CAD files) to the Owner Facilities Department for pre Certificate of Occupancy acceptance audit.
  2. -10 days: Building and Installer Designed Systems As-Built audit by the Owner Facilities Department.
  3. -10 days: Close-Out Manuals audit by the Owner Facilities Department.
  4. -1 day: Building and Installer Designed Systems As-Built acceptance audit by the Owner Facilities Department.
  5. -1 day: Close-Out Manuals acceptance audit by the Owner Facilities Department.
  6. If record documents are to be prepared the following dates shall be part of the timeline.
  7. 0 days: Turnover of all As-Built Documents to the Design Firm of Record for the preparation of Record Documents. This milestone shall coincide with the execution of the Certificate of Substantial Completion. Incomplete documents shall be identified on the punch list.
  8. +27 days: Record Document audit by the Owner Facilities Department.
  9. +30 days: Record Document acceptance audit by the Owner Facilities Department. This milestone shall coincide with the execution of the Certificate of Final Completion.
- C. As part of the Work, the acceptance of all Project Close-Out Documentation shall be a pre-requisite to the execution of a Certificate of Final Completion. The Contractor's failure to either maintain or complete the Project Close-Out Documentation may be viewed as a failure to carry out the Work.

#### PART 2 - PRODUCTS

##### 2.1 AS-BUILT PREPARATION

- A. *As-Built Prints: Maintain one set of prints of the most current Contract Drawings. Shop drawings and Contractor coordination drawings shall not be used in lieu of Contract Drawings.*
1. Preparation: Mark As-Built Prints to show the actual installation where installation varies from that shown originally. Require the individual or entity who obtained as-built data, whether the individual or entity is the installer, subcontractor, or similar entity, to prepare the marked-up As-Built Prints.
  2. Give particular attention to information or concealed elements that would be difficult to identify or measure and record later.
  3. Accurately record information in an understandable drawing technique. Figure 1 is provided as a quality standard for As-Built Print mark-ups.
  4. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

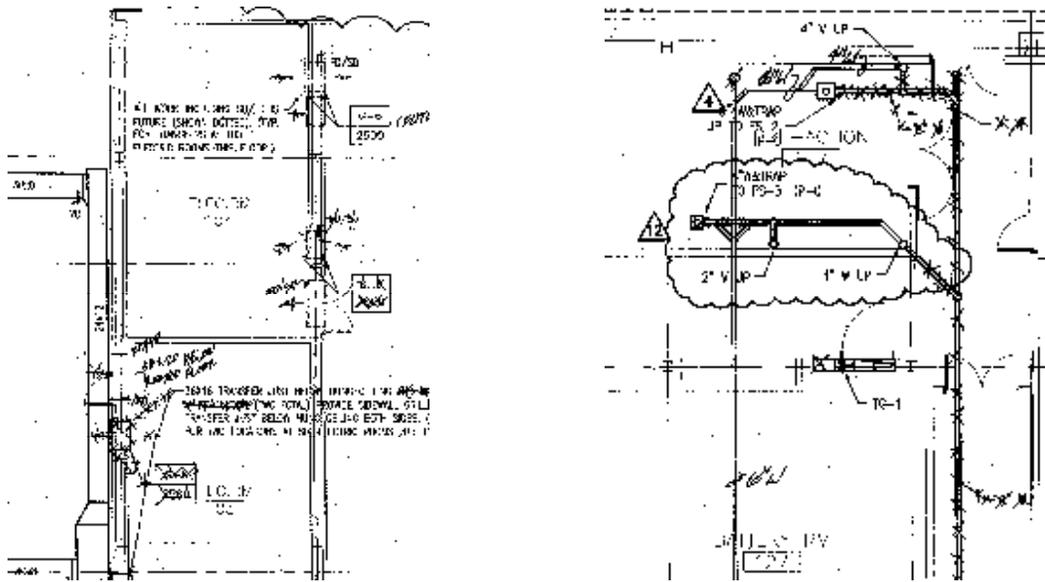


Figure 1 – Sample As-Built Print Mark-ups

5. Content: Types of items requiring marking include, but are not limited to, the following:
  - a. Dimensional changes to Drawings.
  - b. Revisions to details shown on Drawings.
  - c. Depths of foundations below first floor.
  - d. Locations and depths of underground utilities.
  - e. Revisions to and/or routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by a Contractual Instrument.
  - k. Changes made following Registrant's written orders.
  - l. Details not on the original Contract Drawings.
  - m. Field records for variable and concealed conditions.
  - n. Record information for the Work that is shown only schematically.
6. Mark only the Contract Drawings completely and accurately. If, and only if, reviewed and authorized by the Registrant and the Owner Facilities Department in advance, Shop Drawings may be marked and appropriately cross-referenced on the As-Built Prints.
7. Mark As-Built Prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location. Black ink or graphite shall not be used.
8. Mark important additional information that was either shown schematically or omitted from the original Drawings.
9. Note Contractual Change Instrument numbers, Request For Information numbers, and similar identification, where applicable. If a deviation occurred from a Contractual Change Instrument or a Request For Information, clearly indicate the deviation on the As-Built Prints.
10. Physically affix project sketches to their applicable sheets and mark deviations in the same manner as the As-Built Prints.

- B. *As-Built Specifications: Maintain one copy of the most current Specifications.*
1. Preparation: Mark As-Built Specifications to highlight the selected product manufacturer where the Specification identifies multiple manufacturers. Require the individual or entity who obtained as-built data, whether the individual or entity is the installer, subcontractor, or similar entity, to prepare the marked-up As-Built Specification.
  2. If the Operation and Maintenance manuals do not contain product model numbers, add the relevant manufacturer and product information to the As-Built Specifications.
  3. Where substitutions occur, add the relevant manufacturer and product information to the affected As-Built Specification.
  4. Give particular attention to information that is likely to be referenced at a future date by the Owner Facilities Department.
- C. *Format: Identify and date each As-Built Document. Include the designation "PROJECT AS-BUILT" in a prominent location.*
1. Organize As-Built Prints, newly prepared As-Built Drawings, and As-Built Specifications into manageable sets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT AS-BUILT DRAWINGS (or SPECIFICATIONS)."
    - d. Name of Architect and Contractor.
    - e. Name, telephone number, and contact person for Contractor.
- D. *Special Requirements: For Civil and Landscape plans, special as-built verbiage must be placed on the plans by the Registrant who prepares them. See As-Built Submission later in this section.*
1. The Contractor shall be responsible to procure the services of a Registered Professional Engineer or Registered Land Surveyor as appropriate to certify the As-Built Drawings.

## 2.2 AS-BUILT SUBMISSION

- A. Building Construction or Tenant Improvements: All As-Built Prints, Newly Prepared As-Built Drawings, As-Built Specifications, and the Certified Civil and Landscape As-Built Documents shall be submitted to the Design Firm of Record for the preparation of Record Documents.
1. Acceptance of the As-Built Documents by the Design Firm of Record is a prerequisite of the Certificate of Substantial Completion and shall be documented via a letter from the Registrant to the Owner indicating the acceptance date.
  2. As-Built Drawings:
    - a. One (1) 20# bond print set marked pursuant to Para. 2.1.A herein above.
    - b. One (1) 20# bond black and white copy, bound.
  3. Record Specifications (if applicable):
    - a. One (1) 20# bond print set marked pursuant to Para 2.1.B herein above, in three ring binder.
    - b. One (1) 20# bond black and white copy, bound.
- B. Installer Designed Systems: Where specialized work for the project was engineered and constructed by a single source to the Contractor, the source shall be required to As-Built their system(s) prior to demobilization from the project site. In addition the Installer Designed System(s) shall have Record Documents prepared by the System Engineer from the As-Built documents and shall be a requirement of the Contract. Provide the following deliverables concurrent with the completion of the Building Construction or Tenant Improvement As-Built Documents:
1. Record Drawings:

- a. One (1) 20# bond print set, unbound (Design Firm Copy).
- b. One (1) 20# bond print set, bound (Contractor Copy).
2. Record Specifications (if applicable):
  - a. One (1) 20# bond print set, unbound (Design Firm Copy).
  - b. One (1) 20# bond print set, bound (Contractor Copy).
3. Record Electronic Files: CAD files (.dwg) shall be compatible with the latest commercially available release of AutoCAD. Drawings are to be purged of all extraneous information, shall be "bound" to insert all reference files, shall be accompanied by any non-native fonts, and shall be free of complex file pathing which complicates file opening when transferred from the CDROM. Binding of reference files shall be done using AutoCAD's "Insert" option so as to avoid layer and block name corruption.
  - a. One CDROM (Design Firm Copy).
  - b. One CDROM (Contractor Copy).

### 2.3 RECORD PROJECT SUBMITTALS

- A. Preparation and Submission: Identify one copy and/or sample of each Project Submittal item as belonging to the Owner. Transmit the submittal item to the Owner project representative concurrent with the return of the reviewed submittal to the subcontractor. This enables the Owner to conduct a cursory review both of the submittal and the Registrant's review comments.
- B. Samples: It is not necessary to provide the Owner with full size samples of heavy products such as brick, masonry block, precast, or cementitious roof materials. Samples of finish materials such as laminates, wall fabrics, tiles, and glazing are all of value to future building modifications.

### 2.4 ENGINEERING MANUAL

- A. Contents: The Engineering Manual shall contain:
  1. A summary of design capacity and anticipated day one loading of each major mechanical and electrical system that may require future capacity consideration. Relevant systems may include: Chillers, Cooling Towers, Chilled Water Piping, Water Treatment Systems, UPS Systems, Emergency Generator Systems, Major Air Handlers, etc.
  2. A copy of each Record electrical panel schedule prepared from the As-Built Drawings provided by the Contractor. If available from the Design Firm of Record, obtain the Microsoft Excel file(s) used to create the schedules and provide the file(s) electronically on a diskette or CDROM and place the media in a jacket specifically designed for three ring binders.
  3. Valve Identification Tag spreadsheet. Refer to Division 15 Specifications for valve identification tagging requirements. Using Microsoft Excel, prepare hardcopies for the manual in 8 1/2" x 11" format. Provide the file electronically on a diskette or CDROM and place the media in a jacket specifically designed for three ring binders.
- B. Submission: Two (2) copies. Prepare the manual in a format similar to that identified in the Execution portion of this Specification.

### 2.5 WARRANTY MANUAL

- A. Contents: The Warranty Manual shall contain:
  1. A copy of the executed Certificate of Substantial Completion which identifies the date on which all warranties commence.
  2. An original signed warranty statement from the Contractor identifying the commencement date of the warranty period agreed upon in the Contract. The letter shall identify a single point of contact for all warranty claims and shall reference by attachment any special warranty claim forms.
  3. Original signed warranty letters from all applicable subcontractors identifying the commencement date of the warranty period agreed upon in the Contract. Each letter shall identify a single point of contact for all warranty claims and shall reference by attachment any special warranty claim forms.
  4. Original signed warranty letters for major pieces of equipment which possess a manufacturer's warranty separate from the subcontractor's installation warranty. Each

letter shall identify a single point of contact for all warranty claims, shall reference the name of the installer, and shall reference by attachment any special warranty claim forms.

- B. Submission: Two (2) copies. Prepare the manual in a format similar to that identified in the Execution portion of this Specification. The Owner acknowledges that certain warranties may lag the date of Substantial Completion by some period of time. The receipt of all warranties shall be a prerequisite of executing the Certificate of Final Completion.

## 2.6 OPERATION AND MAINTENANCE MANUAL

- A. The Manual shall be composed as a single point of reference for the Owner Facilities Department and therefore shall contain a mixture of Equipment Operation information, Equipment Maintenance information, and Product Maintenance information.

- B. Equipment Operation

- 1. Contents: The Equipment Operation contents of the Operation and Maintenance Manual shall adequately convey the operational instructions for all equipment and may therefore contain many of the following items:
  - a. Product name and model number.
  - b. Manufacturer's name.
  - c. Equipment identification with serial number of each component.
  - d. Equipment function.
  - e. Operating characteristics.
  - f. Limiting conditions.
  - g. Performance curves.
  - h. Operating standards.
  - i. Operating procedures.
  - j. Standardized operating logs.
  - k. Control diagrams.
  - l. Piped system diagrams.
  - m. Precautions against improper use.
  - n. Startup procedures.
  - o. Equipment or system break-in procedures.
  - p. Routine and normal operating instructions.
  - q. Regulation and control procedures.
  - r. Instructions on stopping.
  - s. Normal shutdown instructions.
  - t. Seasonal and weekend operating instructions.
  - u. Required sequences for electric or electronic systems.
  - v. Sequence of operation and controls diagrams.

- C. Equipment Maintenance

- 1. Contents: The Equipment Maintenance contents of the Operation and Maintenance Manual shall adequately convey the maintenance instructions for all equipment and may therefore contain many of the following items:
  - a. Manufacturer maintenance instructions and bulletins.
  - b. Maintenance and service schedules.
  - c. Maintenance service contracts.
  - d. Name, address, and telephone number of installer, supplier, and maintenance service agent.
  - e. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - f. Spare parts list and source information.
  - g. Wiring diagrams.
  - h. List of items recommended to be stocked as spare parts.
  - i. Test and inspection instructions.
  - j. Troubleshooting guide.

- k. Precautions against improper maintenance.
  - l. Aligning, adjusting, and checking instructions.
  - m. Demonstration and training videotape, if available.
  - n. List of required lubricants for equipment.
  - o. Schedules for preventive and routine maintenance.
  - p. Manufacturer forms for recording maintenance.
  - q. Procedures to follow and required notifications for warranty claims.
- D. Product Maintenance
- 1. Contents: The Product Maintenance content of the Operation and Maintenance Manual shall adequately convey the maintenance instructions for all regularly maintained products and may therefore contain many of the following items:
    - a. Product name, model, style, and color number.
    - b. Manufacturer's name.
    - c. Name, address, and telephone number of installer, supplier, and/or maintenance service agent.
    - d. Re-ordering information for specially manufactured products.
    - e. Inspection procedures.
    - f. Types of cleaning agents to be used and methods of cleaning.
    - g. List of cleaning agents and methods of cleaning detrimental to product.
    - h. Schedule for routine cleaning and maintenance.
    - i. Repair instructions.
- E. Manufacturer Data: Where manuals contain manufacturer standard printed data, include only sheets pertinent to the product or component installed. Mark each sheet to identify each product or component incorporated into the Work. Avoid the inclusion of data for products not incorporated into the Work.
- F. Training: The manual(s) shall be referenced in detail during systems operation training. The Contractor is not expected to provide copies of the manual(s) for each training participant, but may wish to reproduce selected portions of the manual(s) as training aids.
- G. Submission: Two (2) copies prepared and submitted in three ring binders. One (1) copy prepared and submitted in a winged catalog binder. Refer to the Execution portion of this Specification for manual format requirements.

## 2.7 ATTIC STOCK

- A. Various Division 2 thru 16 Specifications will identify an attic stock requirement of material to be turned over to the Owner Facilities Department at the conclusion of the project. All attic stock materials shall be:
- 1. Provided in their original packaging (boxes, crates, cans, etc.).
  - 2. Neatly identified when the item is concealed within a box or container.
  - 3. Neatly arranged in an appropriate location of the building (Storage Room, Future Office, or similar "out of the way" space).
- B. Submission: Attic stock shall be inventoried and documented via a transmittal to the Owner Facilities Department. The transmittal shall identify the date, material description, quantity provided, and shall reference the Specification where the attic stock requirement was quantified. The Contractor shall obtain a signature from the designated Owner Facilities Department contact as evidence of acceptance.
- C. Provisions for attic stock is required in numerous specification sections. Review and provide materials so listed.

## 2.8 KEYS

- A. If a security key system is used on this project, refer to Specification 08710, Door Hardware, for instructions regarding key turnover to the Owner Facilities Department by the key system vendor. The Contractor is encouraged to limit their use of keys to temporary "Contractor Keys" which are rendered useless upon the first use of an Owner key.

- B. If a key cabinet has been specified, confirm the location shown on the Drawings with the Owner Facilities Department prior to installation.

### PART 3 - EXECUTION

#### 3.1 CLOSE-OUT DOCUMENT MAINTENANCE

- A. The Contractor shall dedicate the resources necessary to comply with this Specification to ensure that the Owner Facilities Department is provided with all of the information necessary to maintain the facility. The submittal timelines established in 1.4 Submittals are not intended to be punitive, rather they are a means to ensure that Owner can adequately maintain its new facility effective the date of Final Completion.
- B. Prepare and store Project Close-Out Documents and Samples in the field office apart from the Contract Documents used for construction. Maintain Project Close-Out Documents and Samples in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to the Owner's copy of the Project Close-Out Documents and Samples for reference and audit during normal working hours.

#### 3.2 MANUAL PREPARATION

- A. Organization: Unless otherwise indicated, organize each manual by CSI Specification number. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.
  - 2. Table of Contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Date of submittal.
  - 4. Name, address, and telephone number of the Contractor.
  - 5. Name, address, and telephone number of the Architect.
- C. Table of Contents: List each applicable CSI Specification number, Specification Title, and the names of products and equipment contained therein.
  - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include a comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size.
  - 1. View Binders: Heavy-duty, D-type three-ring, vinyl-covered, loose-leaf binders, in a thickness necessary to accommodate the contents, sized to hold 8 ½" x 11" paper; with clear view pockets on the front, back, and spine.
    - a. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    - b. Identify each binder on the front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL," project name, and subject matter of contents. Indicate volume number for multiple-volume sets. The identification should be neat and professional in appearance.
- E. Dividers: Heavy-paper dividers with laser labeled tabs for each CSI Specification section number.
- F. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes or CDROMs for computerized electronic equipment.
- G. Drawings: Provide 8 ½" x 11" or 11" x 17" fan folded reductions when possible. Self adhesive binding hole reinforcement rings are encouraged to avoid tear out under heavy use.

1. If oversize drawings are necessary and reductions reduce the readability of the information, fold drawings to same size as text pages and use as foldouts.
2. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

### 3.3 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, the Contractor shall assemble and coordinate information furnished by representatives and consolidate manual contents.

END OF SECTION 01835

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## SECTION 01840 GENERAL COMMISSIONING REQUIREMENTS

### PART 1 - GENERAL

- 1.1 Concord Engineering has been selected as the commissioning Authority to provide commissioning services for this project. The intent of these Commissioning specifications is to:
- A. Familiarize the Contractors with the commissioning process and emphasize the differences between a commissioned and a non commissioned project.
  - B. Specify the labor, and tasks which are required by the contractors to support and comply with the commissioning requirements of this project; thus allowing the contractors to properly estimate the cost of the commissioning work with in their scope.
- 1.2 RELATED /DIVISIONS AND SECTIONS
- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section. Specific Commissioning (Cx) requirements are given in the following sections of these specifications. All of the following sections apply to the Work of this section:
    - 1. 01040 Project Coordination
    - 2. 01300 Submittals
    - 3. 01400 Quality Control
    - 4. 01835 Project Close Out Documentation
    - 5. 01845 Commissioning O&M procedures
    - 6. 01850 Demonstration and Training
    - 7. 15960 HVAC Cx - Describes the Cx responsibilities of the Mechanical, Controls and TAB Contractors and the pre-functional and functional testing responsibilities of each.
    - 8. 15970 Plumbing Cx - Describes the Cx responsibilities of the Plumbing Contractor and the pre-functional and functional testing responsibilities.
    - 9. 16800 Electrical Cx - Describes the Cx responsibilities of the Electrical Contractor and the pre-functional and functional testing responsibilities
- 1.3 RELATED DOCUMENTS
- A. AHRAE Guideline 0-2005 "The Commissioning Process"
  - B. B. U.S. Green Building Council LEED v2009 "Reference Guide for Green Building Design & Construction"
- 1.4 Definitions
- A. **A/E:** Architect & Engineer
  - B. **Building Systems Commissioning:** Commissioning is the process that ensures building systems are designed, installed, functionally tested, and capable of being operated and maintained in conformance with the design intent (owner's requirements). Commissioning for this project follows requirements outlined in ASHRAE Guideline 0-2005 "The HVAC Commissioning Process". This standard approach will be applied to all commissioned systems.
  - C. **Pre-Functional Testing:** A checking process requiring the GC/Sub's completion of comprehensive Installation Check Sheets to verify that the equipment has been correctly installed as per the contract documents.

- D. **Functional Performance Testing:** Individual component and comprehensive system checks. These checks verify that components operate correctly in a standalone type situation and that components work correctly together as an overall system. Functional checks are concerned with correct sequences of operation and primary safety and efficiency concerns such as temperature and equipment interlocks. Functional checks are first applied to local components and controls (such as a motor, starter and disconnect) and are then applied to complete systems (such as a pump and pressure sensor and the central workstation command center). The end goal is that all associated equipment and components are verified simultaneously to ensure that all elements operate as per the contract documents.
- E. **Commissioning Plan:** A document defining the Cx process, scope, team and milestones/goals throughout the entire project from the inception of commissioning through training and turnover to the customer.
- F. **Issue:** Any defects, problems, and deficiencies that do not meet contract requirements or the intent of the project design. All Issues are entered into a database by the Commissioning Authority to enable tracking and closeout.
- G. **Abbreviation:** The following are common abbreviations used in this section:

AHU	Air Handling Unit	O&M	Operation and Maintenance
CxA	Commissioning Authority	PT	Performance Test
Cx	Commissioning	SOP	Sequence of Operation
FC	Functional Check	Subs	Sub-Contractors
GC	General Contractor	TAB	Test, Adjust, Balance
HVAC	Heating, Ventilation, Air-Conditioning	VAV	Variable Air Volume Unit

## 1.5 DESCRIPTION

### A. Summary

1. Commissioning is a systematic process of ensuring that all building systems perform interactively according to the design intent and the owner's operational needs. The commissioning process shall encompass and coordinate the traditionally separate functions of system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training. The commissioning process does not take away from, or reduce the responsibility of, the General Contractor and installing subcontractors to provide a finished and fully-functioning product.

### B. Purpose.

1. Commissioning during the construction phase is intended to achieve the following specific objective according to the Contract Documents:
  - a. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installing contractors.
  - b. Verify and document proper performance of equipment and systems.
  - c. Verify that O&M documentation left on site is complete.
  - d. Verify that the Owner's operating personnel are adequately trained.

## 1.6 COORDINATION

- A. **Commissioning Team.** The members of the commissioning team consist of the designated representative of the Owner, Commissioning Authority (CA), the Architect and Design Engineers (particularly the mechanical engineer) (A/E), General Contractor (GC), the Mechanical Contractor (MC), the Testing Adjusting and Balancing (TAB) representative, the Electrical Contractor (EC), the Controls Contractor (CC), the Plumbing Contractor (PC) and the Fire Protection Contractor (FPC). If known, the Owner's building operator/engineer is also a member of the commissioning team.

- B. Management. The CA has been hired by the Owner. The CA directs and coordinates the commissioning activities and is part of the design team. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents.
- C. Scheduling. The CA will work with the Cx team according to established protocols to schedule the commissioning activities. The CA will provide sufficient notice to the Cx team for scheduling commissioning activities. The CM will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

#### 1.7 COMMISSIONING PROCESS

- A. The following narrative provides a brief overview of the typical commissioning tasks during Construction and the general order in which they occur.
  - 1. Commissioning during construction begins with a scoping meeting conducted by the CA where the commissioning process is reviewed with the commissioning team members.
  - 2. Additional meetings will be required throughout construction, scheduled by the CA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
  - 3. Equipment documentation is submitted to the CA during normal submittals, including detailed start-up procedures.
  - 4. The CA works with the GC and the Subcontractors/equipment suppliers in developing startup plans and startup documentation formats.
  - 5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels with pre-functional checklists being completed before functional testing.
  - 6. The Subs, under their own direction, execute and document the pre-functional checklists and perform startup and initial checkout. The CA documents that the checklists and startup were completed according to the approved plans. This will include the CA witnessing start-up of selected equipment.
  - 7. The CA develops specific equipment and system functional performance test procedures. The Subcontractors review the procedures.
  - 8. The procedures are executed by the Subcontractors, under the direction of, and documented by the CA.
  - 9. Items of non-compliance in material, installation or setup are corrected at the Subcontractors' expense and the system retested.
  - 10. The CA reviews the O&M documentation for completeness.
  - 11. Commissioning is completed before Substantial Completion.
  - 12. The CA reviews, pre-approves and witnesses the training provided by the Subcontractors and verifies that it was completed.
  - 13. Deferred testing is conducted, as specified or required.

#### 1.8 RELATED WORK

- A. Specific Commissioning (Cx) requirements are listed in the sections listed above in RELATED /DIVISIONS AND SECTIONS of these specifications. All of these sections apply to the Work of this section:

#### 1.9 RESPONSIBILITIES

- A. The responsibilities of various parties in the commissioning process are provided in this section. It is noted that the services for the Architect, MEP Designers/Engineers, and Commissioning Authority are not provided for in this contract. That is, the Contractor is not responsible for providing their services. Their responsibilities are listed here to clarify the commissioning process.
- B. All Parties

1. Follow the Commissioning (Cx) Plan.
2. Attend commissioning scoping meeting and additional Cx meetings, as necessary.

C. Mechanical, Electrical and Plumbing Designers/Engineers

*(Design, Construction and Acceptance Phase)*

1. Perform normal submittal review, construction observation, as-built drawing preparation, etc., as contracted. One site observation should be completed just prior to system startup.
2. Provide any design narrative and sequences documentation requested by the CA. The designers shall assist (along with the contractors) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed testing procedures.
3. Participate in the resolution of system deficiencies identified during commissioning, according to the contract documents.
4. Prepare and submit the final as-built design intent and operating parameters documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
5. Edit and update one-line diagrams developed as part of the design narrative documentation and those provided by the vendor as shop drawings for the various Mechanical, Electrical, and Plumbing systems.

D. Commissioning Authority (CA)

The CA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CA may assist with problem-solving non-conformance or deficiencies, but ultimately that responsibility resides with the A/E. The primary role of the CA is to develop and coordinate the execution of a testing plan, observe and document performance. The Contractors will provide all tools or the use of tools to start, check-out and functionally test equipment and systems.

*Design, Construction and Acceptance Phase*

1. Coordinate the commissioning work and, with the A/E, ensure that commissioning activities are being scheduled into the master schedule.
2. Plan and conduct a commissioning scoping meeting, start-up and deficiency meetings as required.
3. Request and review additional information required to perform commissioning tasks, including O&M materials, control sequences, contractor start-up and checkout procedures.
4. Before startup, gather and review the current control sequences and interlocks and write detailed testing procedures.
5. Review and approve normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs.
6. Write and distribute pre-functional tests and checklists.
7. Perform site visits, as necessary, to observe component and system installations. Attends selected planning and job-site meetings to obtain information on construction progress.
8. Witness all or part of the HVAC/Plumbing piping test and flushing procedure, sufficient to be confident that proper procedures were followed. Document this testing and include the documentation in O&M manuals. Notify the A/E of any deficiencies in results or procedures.
9. Approve pre-functional tests and checklist completion by reviewing pre-functional checklist reports and by selected site observation and spot-checking.
10. Approve systems startup by reviewing start-up reports and by selected site observation.
11. Review TAB execution plan.
12. Analyze any functional performance trend logs and monitoring data to verify performance.
13. Compile and maintain a commissioning record and building systems book(s).
14. Review and approve the preparation of the O&M manuals.
15. Provide a final commissioning report.
16. Complete and submit LEED template letter for credit EA Prerequisite 1 Fundamental Commissioning.

E. Architect/Engineering Firm

*Design, Construction and Acceptance Phase*

1. Facilitate the coordination of the commissioning work by the CA, and, with the CA, ensure that commissioning activities are being scheduled into the master schedule.
2. Review and approve the final Construction Commissioning Plan.
3. Attend a commissioning scoping meeting and other commissioning team meetings as needed.
4. When necessary, observe and witness pre-functional checklists, startup and functional testing of selected equipment
5. Review commissioning progress and deficiency reports.

F. Equipment Suppliers

1. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
2. Assist in equipment testing per agreements with Subcontractors.
3. Include all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment according to these Contract Documents in the base bid price to the Contractor. Through the contractors they supply products to, analyze specified products and verify that the designer has specified the newest most updated equipment reasonable for this project's scope.
4. Provide information requested by CA regarding equipment sequence of operation and testing procedures.
5. Review test procedures for equipment installed by authorized factory representatives.

G. Controls & TAB Contractors

1. Controls & TAB Contractors will be responsible to carry out the commissioning requirements specified in Section 15960.

1.10 SYSTEMS TO BE COMMISSIONED

A. This project will require integrated total building commissioning to include all of the following systems:

Generators & Automatic Transfer Switch
Medium & Low Voltage Switchgear & Associated Breakers, Relays and Transformers
Medium Voltage Switches
Medium Voltage Cable Testing
Low Voltage Cable Testing
Transient Voltage Surge Suppressors
Electrical Distribution
Grounding & Lightning Protection Systems
Lighting Control Systems
Emergency Power Off Systems
Automated Controls/BAS Systems
Air Handling Unit & Energy Recovery Wheels
Exhaust Fans
Chiller Plant, Piping and Pumping Systems
Heating Plant, Piping and Pumping Systems
Chemical Treatment Systems
Glycol Systems
Laboratory Fume Hoods
Chilled Beams
Fan Coil Units
Re-Heat Coil
Direct Expansion Split System
Heat Exchanger
Air Valves & Distribution System
Domestic Water Booster Pumps
Domestic Hot Water Generation
Sump Pumps
Fire Alarm System
Sprinkler Systems – Wet & Pre-action
Egress Lighting Systems

PART 2 - PRODUCTS – (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 REPORTING

- A. The CA will provide regular field reports to the Owner as construction and commissioning progresses.
- B. The CA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos and progress reports.
- C. A final summary report by the CA will be provided to the Owner. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report. Pre-functional checklists, functional tests and monitoring reports will not be part of the final report, but will be stored in the Commissioning Record in the O&M manuals.

3.2 Start-up, Prefunctional Checklists And Initial Checkout

- A. The following procedures apply to all equipment to be commissioned, according to Section 1.10, "SYSTEMS TO BE COMMISSIONED"
  - 1. Pre-functional checklist.
  - 2. Start-up: The start-up plan shall consist of:
    - a. The CA's pre-functional checklist.
    - b. The manufacturer's standard start-up procedure
    - c. The manufacturer's standard field checkout sheets.
- B. Execution of Pre-functional Checklists and Startup.
  - 1. The CA shall observe, at minimum, the procedures for each piece of primary equipment, unless there are multiple units. In no case will the number of units witnessed be less than 25% of the total number of identical or very similar units.
  - 2. For lower-level components of equipment, (e.g., unit heaters, sensors, controllers), the CA shall observe a sampling of the pre-functional and start-up procedures. The sampling procedures are identified in the commissioning plan.
  - 3. The Subs and vendors shall execute startup and provide the CA with a signed and dated copy of the completed start-up and pre-functional tests and checklists for 100% of all commissioned equipment.
- C. Deficiencies, Non-Conformance and Approval in Checklists and Startup.
  - 1. The Subs shall clearly list any outstanding items of the initial start-up and pre-functional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CA within two days of test completion.
  - 2. The CA reviews the report and submits either a non-compliance report or an approval form to the A/E. The CA shall work with the Subs and vendors to correct and retest deficiencies or uncompleted items. The installing Subs or vendors shall correct all areas that are deficient or incomplete in the checklists and tests in a timely manner, and shall notify the CA as soon as outstanding items have been corrected and resubmit an updated start-up report and a Statement of Correction on the original non-compliance report. When satisfactorily completed, the CA recommends approval of the execution of the checklists and startup of each system.

### 3.3 FUNCTIONAL PERFORMANCE TESTING

- A. This sub-section applies to all commissioning functional testing for all divisions.
- B. The general list of equipment to be commissioned is found in Section 1.10 of this specification
- C. **Objectives and Scope.** The objective of functional performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional testing facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the testing process, areas of deficient performance are identified and corrected, improving the operation and functioning of the systems. In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required.
- D. **Development of Test Procedures.** Before test procedures are written, the CA shall obtain all requested documentation and a current list of change orders affecting equipment or systems, including an updated points list, program code, control sequences and parameters. The CA shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. Each Sub or vendor responsible to execute a test shall provide assistance to the CA in developing the procedures review. Prior to execution, the CA shall provide a copy of the test procedures to the Sub(s) who shall review the tests for feasibility, safety, equipment and warranty protection. The CA shall review owner-contracted, factory testing or required owner acceptance tests which the CA is not responsible to oversee, including documentation format, and shall determine what further testing or format changes may be required to comply with the Specifications. Redundancy of testing shall be minimized.
- E. **Coordination and Scheduling.** The Subs shall provide sufficient notice to the CA regarding their completion schedule for the pre-functional checklists and startup of all equipment and systems. The CA will schedule functional tests through the A/E and affected Subs. The CA shall direct, witness and document the functional testing of selected equipment and systems. The Subs shall execute the tests.
- F. In general, functional testing is conducted after pre-functional testing and startup has been satisfactorily completed. The control system is sufficiently tested and approved by the CA before it is used for TAB or to verify performance of other components or systems. The air balancing and water balancing is completed and debugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked.

### 3.4 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

- A. **Documentation.** The CA shall witness and document the results of all functional performance tests using the specific procedural forms developed for that purpose. Prior to testing, these forms are provided to the CA for review and approval and to the Subs for review. Samples of typical Pre functional and Functional Check forms are included in this specification to illustrate the typical steps which the contractors will need to complete to demonstrate compliance.
- B. **Non-Conformance.**
  - 1. The CA will record the results of the functional test on the procedure or test form. All deficiencies or non-conformance issues shall be noted and reported to the Owner. These results shall be presented in the Issues log. The issues log will be used throughout the job for documenting issues and their subsequent correction.
  - 2. Corrections of minor deficiencies identified may be made during the tests at the discretion of the CA.
  - 3. Every effort will be made to expedite the testing process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CA will not be pressured into

- overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues, unless there is an overriding reason to do so at the request of the Owner.
4. The CA will await for the contractors to report, in writing, that deficiencies reported in the Issues log have been corrected. Once the CA receives notification that the deficiencies have been corrected the CA will back check the issue and verify that the issue has been corrected and will close out the issue.
  5. If the results of the back check are that the issue still exist the item will remain open and the contractor will be notified of the deficiency.
  6. The CA will perform one back check as part of their contract. Subsequent back checks will be performed and back charged to the responsible contractor. The CA will keep a record of the time required to perform the additional back checks. The CM will verify the time required by signing the CAs field visit time sheet on the day (s) the additional back checks are performed.
- C. **Approval.** The CA notes each satisfactorily demonstrated function on the test form. Formal approval of the functional test is made later after review by the CA.

### 3.5 OPERATION AND MAINTENANCE MANUALS

- A. Commissioning Record in O&M Manuals.
1. The CA is responsible to compile, organize and index the following commissioning data by equipment into labeled, indexed and tabbed, three-ring binders and deliver it to the Owner. Three copies of the manuals will be provided.
  2. The information will also be provided in Digital format as well
  3. Final Report Details. The final commissioning report shall include an executive summary, list of participants and roles, brief building description, overview of commissioning and testing scope and a general description of testing and verification methods. For each piece of commissioned equipment, the report should contain the disposition of the commissioning authority regarding the adequacy of the equipment, documentation and training meeting the contract documents in the following areas: 1) Equipment meeting the equipment specifications, 2) Equipment installation, 3) Functional performance and efficiency, 4) Equipment documentation and design intent, and 5) Operator training. All outstanding non-compliance items shall be specifically listed. Recommendations for improvement to equipment or operations, future actions, commissioning process changes, etc. shall also be listed. Each non-compliance issue shall be referenced to the specific functional test, inspection, trend log, etc. where the deficiency is documented.

### 3.6 TRAINING OF OWNER PERSONNEL

- A. The GC shall be responsible for training coordination and scheduling, and ultimately for ensuring that training is completed.
- B. The CA shall be responsible for approving the content and adequacy and witnessing of the training of owner personnel for commissioned equipment.
- C. Each contractor responsible for training will provide a syllabus for the content of each class to the CA for approval two weeks prior to the training.

### 3.7 DEFERRED TESTING

- A. **Unforeseen Deferred Tests.** If any check or test cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checklists and functional testing may be delayed upon approval of the Owner. These tests will be conducted in the same manner as the seasonal tests as soon as possible.
- B. **Seasonal Testing.** During the warranty period, seasonal testing shall be completed as part of this contract. The CA shall coordinate this activity. Tests will be executed, documented and deficiencies

corrected by the appropriate Subs, with facilities staff and the CA witnessing. Any final adjustments to the O&M manuals and as-builds due to the testing will be made.

3.8 Sample Test Forms

**Contractor Pre-Functional Commissioning      Test Form**  
**Provided by Concord Engineering**

**for**  
**Facility: Sample Form**

**Air Handler: Sample Form**

Pre-functional checklist items are to be completed as part of startup & initial checkout, preparatory to functional testing.

- This checklist does not take the place of the manufacturer's recommended checkout and startup procedures or report.
- Items that do not apply shall be noted with the reasons on this form (N/A = not applicable, BO = by others).
- If this form is not used for documenting, one of similar rigor can be used as a replacement but must be approved by the CA and the Owner or their Representative.
- The General Contractor is responsible for all sections of the checklist and will be responsible to see that the appropriate checklist items by their subcontractors are completed and checked off. This is solely the responsibility of the General Contractor when they are functioning as a Single Prime. In the event the project is functioning with Multiple Primes all contractors are required to verify completion by signing and dating in the appropriate section.
- The pre-functional test form needs to be submitted to the CA for review prior to functional performance testing. The CA will not perform pre-functional review of the equipment until the completed pre-functional forms are provided by the GC or contractors.
- A/E = architect/engineer, All = all contractors, CA = commissioning agent, CC = controls contractor, EC = electrical contractor, GC = general contractor, MC = mechanical contractor, SC = sheet metal contractor, TAB = test, adjust and balance contractor.

**Approvals:** This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

Responsible Contractor	Date	Owner's Representative	Date
------------------------	------	------------------------	------

General Contractor shall provide check marks in appropriate locations on form. If an item does not apply the area shall be marked N/A. Problems, suggestions or recommendations shall be identified with a number and noted in the comment section at the end of the test form.

**1. Requested documentation submitted**

Equipment Tag →		Comments
Manufacturer's cut sheets		
Performance data (fan curves, coil data, etc.)		
Installation and startup manual and plan		
Sequences and control strategies		

- **Documentation complete as per contract documents.**     **YES**     **NO**

**2. Model verification**

<b>Equipment Tag</b> →	
Manufacturer	
Model No.	
Cooling Capacity	
Refrigerant Type	
Starter Model	
Voltage/Ph/A	

- *The equipment installed matches the specifications for given trade.* \_\_\_ YES \_\_\_ NO

**3. Pre-Functional Checks**

Item Checked	Equipment Tag →	Y/N	Comment #
<b>General Installation</b>			
General appearance good, no apparent damage			
Proper vibration isolators installed and adjusted			
Factory Insulation not punctured, torn, etc.			
Isolation valves and balancing valves installed			
Pipe fittings and accessories complete			
Pipes not supported on chiller			
VFD factory mounted with Circuit Breaker			
Two chiller lead/lag controls			
Test plugs installed near all control sensors and as per spec			
Flow switch installed as required?			
Flow meters installed?			
Proper refrigerant level?			
No refrigerant leakage?			
Proper oil types?			
Proper oil level?			
Purge unit installed, if specified?			
Piping type and flow direction labeled on piping?			
Equipment labels affixed?			
Oil heater installed properly?			
Size of over current heater in motor starter correct?			
Oil filter clean?			
Master control panel for sequence control of heat exchangers, pumps, chillers, tower fans, etc.?			

Item Checked	Y/N	Comment #
Equipment Tag →		
<b>Electrical and Controls</b>		
Power wiring installed properly?		
All electrical components grounded properly?		
Control wiring and control system hooked up?		
Sensors calibrated (see calibration section below)?		
Control system interlocks hooked up and functional?		
Fuses sizes correct as per mfg submittals?		
All control devices, pneumatic tubing and wiring complete?		
Safeties installed and safe operating ranges for this equipment provided to the commissioning agent?		
Chilled water piping and pumps pre-functional checklists completed?		

- **The checklist items of Part 4 are all successfully completed for given trade. \_\_\_ YES \_\_\_ NO**

**Comments:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Contractor Functional Commissioning Test Form**

**Provided by Concord Engineering**

**for**

**Facility: Sample Form**

**Air Handling Unit: Sample Form**

Pre-functional checklist items are to be completed as part of startup & initial checkout, preparatory to functional testing.

- This checklist does not take the place of the manufacturer's recommended checkout and startup procedures or report.
- Items that do not apply shall be noted with the reasons on this form (N/A = not applicable, BO = by others).
- If this form is not used for documenting, one of similar rigor can be used as a replacement but must be approved by the CA and the Owner or their Representative.
- The General Contractor is responsible for all sections of the checklist and will be responsible to see that the appropriate checklist items by their subcontractors are completed and checked off. This is solely the responsibility of the General Contractor when they are functioning as a Single Prime. In the event the project is functioning with Multiple Primes all contractors are required to verify completion by signing and dating in the appropriate section.
- The pre-functional test form needs to be submitted to the CA for review prior to functional performance testing. The CA will not perform pre-functional review of the equipment until the completed pre-functional forms are provided by the GC or contractors.

- A/E = architect/engineer, All = all contractors, CA = commissioning agent, CC = controls contractor, EC = electrical contractor, GC = general contractor, MC = mechanical contractor, SC = sheet metal contractor, TAB = test, adjust and balance contractor.

**Approvals:** This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

\_\_\_\_\_  
Responsible Contractor                      Date                      Owner's Representative                      Date

General Contractor shall provide check marks in appropriate locations on form. If an item does not apply the area shall be marked N/A. Problems, suggestions or recommendations shall be identified with a number and noted in the comment section at the end of the test form.

**1. Requested documentation submitted**

Equipment Tag →		Comments
Training documentation		
Final TAB report		
Startup report		
O&M Manuals		

- *Documentation complete as per contract documents.*     YES     NO

**2. Model verification**

Equipment Tag →	
Manufacturer	
Model No.	
Cooling	
Capacity	
Heating	
Capacity	
S Fan	
Capacity/HP	
R/E Fan	

Capacity/HP	
VFD	

- *The equipment installed matches the specifications for given trade.* \_\_\_ YES \_\_\_ NO

### 3. Functional Checks

Item Checked	Y/N	Comment #
<b>Equipment Tag</b> →		
Supply fan rotation correct		
Return / exhaust fan rotation correct		
No unusual noise or vibration in supply and exhaust fans		
Condenser fan rotation correct (air cooled)		
Condenser fan acceptable noise and vibration (air cooled)		
Measure line to line voltage imbalance for 1/3 of the compressors: Compressor 1 Phase: (%Imbalance = 100 x (avg. - lowest) / avg.) Record in cell, all three phase voltages. Imbalance less than 2%?		
Compressor 2 Phase: (%Imbalance = 100 x (avg. - lowest) / avg.) Record in cell, all three phase voltages. Imbalance less than 2%?		
Record full load running amps for each compressor. _____ rated FL amps x _____ srvc factor = _____ (Max amps). Running less than max?		
Record full load running amps for each condenser fan. _____ rated FL amps x _____ srvc factor = _____ (Max amps). Running less than max?		
Fans > 5 hp Phase Checks: (% imbalance = 100 x (avg. - lowest) / avg.) List fan & record all 3 voltages in cell. Imbalance less than 2%?		
Record full load running amps for each fan. _____ rated FL amps x _____ srvc factor = _____ (Max amps). Running less than max?		
Inlet vanes aligned in housing, actuator spanned, modulate smoothly and proportional to input signal and EMS readout.		
All dampers (OSA, RA, EA, etc.) stroke fully without binding and spans calibrated and BAS reading site verified (follow procedure in Calibration and Leak-by Test Procedures). List dampers checked: _____		
Valves stroke fully and easily and spanning is calibrated (follow procedure in Calibration and Leak-by Test Procedures). List each actuated valve here when spanned: _____		
Valves verified to not be leaking through coils when closed at normal operating pressure (follow procedure in Calibration and Leak-by Test Procedures).		
The HOA switch properly activates and deactivates the unit		
Safeties installed and safe operating ranges for this equipment provided to the commissioning agent		
Specified sequences of operation and operating schedules have been implemented with all variations documented		
Specified point-to-point checks have been completed and documentation record submitted for this system		
Startup report completed with this checklist attached		

- *The checklist items of Part 3 are all successfully completed for given trade.....*  **YES**  **NO**

**Comments:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**END OF SECTION 01840**

SECTION 01845– COMMISSIONING: OPERATIONS & MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DIVISIONS/SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. 01010 Summary
- C. 01770 Close-out Procedures
- D. 15000 Mechanical
- E. 16000 Electrical
- F. 01840 General Commissioning Requirements
- G. 01850 Commissioning: Demonstration & Training

1.2 SUMMARY

- A. This Specification Section addresses the administrative and procedural requirements for preparing operation and maintenance manuals and information for this project and the associated installed systems.
- B. This Specification Section is not to be construed as superseding previously outlined directives in Divisions 1, 15 and 16. Rather, this Section outlines additional requirements to be performed.
- C. The Systems Operation and Maintenance Manual will be prepared under this contract for the following systems, in accordance with the requirements and procedures as documented in this Specification.
- D. The General Contractor will be responsible for compiling and preparing all documentation as outlined above. All subcontractors are responsible for providing the necessary documentation to the GC in a timely manner. The GC will prepare and submit three (3) copies of the final Systems Operation and Maintenance Manual to the GC/CM. The GC/CM will furnish one copy of the Operation and Maintenance Manual to the CxA for review.
- E. The CxA will review all O&M material to ensure contract compliance and to meet all commissioning objectives.

1.3 SUBMITTAL/DOCUMENTATION FORMAT

- A. This section is not to be construed as superseding Section 01780 requirements regarding preparation of O&M data submittals. Rather, the following requirements are to be performed IN ADDITION to the requirements as outlined in Sections 01780.
- B. Binders

1. Final documents produced under this specification section shall be submitted in vinyl three ring binders with pockets on the spine and front of the binder for placement of printed material with volume title and content information.
2. Refer to Section 01780 for other requirements.

C. Index Tabs

1. Provide machine printed dividers with integrated tabs. Dividers and tabs shall have a mylar overlay for reinforcing and protection.
2. Index dividers shall be letter size heavy weight paper with 1/2" tab extensions with printed text on both sides of the tab.
3. System Operation and Maintenance Manual Tabs
  - a. Provide a full tab for each system or section
  - b. Provide 1/4 cut tabs for each subsystem as follows:
    - 1) System Description
    - 2) System Operations
    - 3) System Maintenance
    - 4) System Repair
    - 5) Equipment Nameplate Data
    - 6) Warranty Data
    - 7) Equipment Invoice
    - 8) Spare Parts Listing

D. Printed Documents

1. Printed documents shall be produced on 8 1/2"X11" for text and up to 11"X17" for drawings and diagrams.
2. Printed text documents shall be double sided within sections.
3. Documents shall be bound along the left side of the document using the 11" edge.
4. Refer to Section 01780 for other requirements.

E. Electronic Documents

1. All files used in the production of the operation and maintenance documentation shall be provided in their native file format.
2. In addition the documentation shall be provided in a web browser compatible format such as HTML, PDF, or browser supported graphical formats.
3. The contractor shall provide browser navigation links within the browser compatible files connecting the documents to each other and central index pages.
4. Files shall be submitted on CD-R or DVD discs with appropriate links between documents.

1.4 COORDINATION

- A. The preparation of the Systems Operation & Maintenance Manual (SOMM) shall be coordinated with the Training requirements specified under Section 01780.
- B. Only approved submittals are to be referenced in the SOMM, refer to Section 01300 Submittals of the specifications for more details on Submittal Procedures.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 SYSTEM OPERATION AND MAINTENANCE MANUAL (SOMM)

Operations and Maintenance data is to be assembled and organized into the Systems Operation and Maintenance Manual (SOMM). The SOMM is to be organized in the following format:

A. Section I – Systems Information

1. System Description – Provide a detailed discussion of the system composition and operation. Include principles and theories necessary for an understanding of the system.
2. System Operations – Provide the following information for the system:
  - a. Start-Up and Shutdown Procedures – Provide step by step instructions to bring systems from static to operational configurations and from operating to shutdown status.
  - b. Normal Operating Instructions – Provide a discussion of normal operation and control of the system. Address operating norms and parameters with expected values for each component of the system.
  - c. Emergency Operating Instructions - Provide emergency operating procedures in the event of equipment malfunctions. Provide shutdown instructions for fires, explosions, spills, or other contingencies.
  - d. System Flow Diagrams - Provide a flow diagram indicating system liquid, air (do not include ductwork) or gas flow during normal operations. Integrate all system components into the diagram. A compilation of non-integrated, flow diagrams for the individual system components are not acceptable.
  - e. Diagrammatic Plans - Provide floor plans indicating the location of equipment and configuration of the system installation. Include the configuration of associated piping or wiring. Subordinate structural features to utility features.
  - f. Environmental Considerations - Provide a listing of the equipment that requires special operation, reporting, testing, analysis or inspection to comply with federal, state or local environmental laws. Examples of possible list items include back flow preventer inspections, underground storage tank testing, hazardous material or waste usage and storage documentation, and air pollution control devices. Each item in the list will include requirements for environmental operation, reporting, testing, analysis and inspection as well as references to respective implementing regulations, statutes, or policies.
  - g. Field/Shop Test Reports - Provide Field and Shop Test Reports that apply to equipment associated with the system.
  - h. Operator Servicing Requirements - Provide instructions for services to be performed by the operator such as lubrication, adjustments, and inspection.
  - i. Safety Instructions - Provide a list of all personnel hazards and equipment safety precautions including recommended safeguards.
  - j. Points/Valve List - Provide a list of all points/valves associated with the system. Show point/valve type, identification number, function, location and normal operating position or state.
  - k. Operating Log - Provide forms, samples, and instructions for keeping necessary operating records.

B. Section II – Systems Maintenance and Repair

1. System Maintenance
  - a. Preventive Maintenance Plan and Schedule - Provide a Preventive Maintenance (PM) plan using manufacturer's recommendations and sound engineering practice. Provide a check sheet that details maintenance tasks and associated frequencies. Also provide an annual schedule indicating when maintenance tasks should be performed such that work is spread as evenly as possible throughout the year.
  - b. Preventive Maintenance Procedures - Provide a Task Card for each individual maintenance task identified on the PM Plan and Schedule. Include detailed PM procedures, safety instructions and precautions including Lock out/tag out precautions, required skill level, number of personnel needed, frequency, special tools needed, and parts needed, and estimated time required to complete the task.
  - c. Filter Schedule – Provide a filter change out schedule indicating the location, types, grades and capacities of filters for specific units.
  - d. Lubrication Schedule - Provide a lubrication schedule indicating types, grades, and capacities of lubricants for specific temperature ranges and applications.

- e. Preventive Maintenance Log - Provide a tabular form for recording the accomplishment of PM. Log must record date PM was performed, findings, action taken, parts used, time required to complete the work, and other data necessary to provide a good historical record of PM activities.
- 2. Systems Repair
    - a. Troubleshooting Guides and Diagnostic Techniques - Provide step- by-step procedures for diagnosing, isolating and correcting system malfunctions. The procedures shall clearly state indications or symptoms of trouble; the sequential instructions, including checks and tests to be performed and conditions to be sought, to determine the cause; and remedial measures to return the equipment and system to operating condition. Identify special test equipment required to perform the procedures.
    - b. Repair Procedures - Provide repair instructions required to restore equipment to proper operating condition and standards.
    - c. Removal and Replacement Instructions - Provide or refer to the manufacturer's data for the instructions for the removal and replacement of equipment components.
- C. Section III – Equipment Nameplate Data
    - 1. Provide a detailed list of the system/equipment nameplate data. This list is to include all applicable design operating data. This list is to be cross-referenced to the applicable equipment submittal for accuracy.
- D. Section IV -- Warranty Data
    - 1. Provide copies of extended warranties for systems, equipment and components. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference all specific operation and maintenance procedures that must be performed to keep the warranty valid.
- E. Section V -- Equipment Invoice/Information
    - 1. Provide a copy of the equipment invoice/purchase order.
    - 2. Key Names and Contact Information – Provide a listing of all contractors, vendors, and manufacturers responsible for the development and installation of the subject system. Include reference information such as order numbers, customer codes, and job numbers. The following will be provided at a minimum:
      - a. Design Professionals of Record
      - b. General Contractors
      - c. Sub-Contractors
      - d. Material Suppliers
      - e. Equipment Vendors
      - f. Equipment Manufacturer
- F. Section VI—Spare Parts Listing
    - 1. Provide a list of maintenance and repair supplies (for example, spare parts, fuels, lubricants) required to ensure continues operation without unreasonable delays. Identify and list parts and supplies that have long purchase lead times.

**END OF SECTION 01820**

## SECTION 01850 – COMMISSIONING: DEMONSTRATION & TRAINING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This specification Section is not to be construed as superseding previously outlined directives in Division 1 and Division 15. Rather, this Section outlines additional requirements to be performed.
- B. This Section includes administrative and procedural requirements for providing site specific instruction to Owner's personnel, including the following:
  - 1. Instruction for the following groups of Owner's personnel
    - a. Building Operators
    - b. Maintenance Support Staff
  - 2. Demonstration of equipment operation and maintenance based on the manuals prepared under Section 01770 – Close-Out Procedures.
  - 3. Videotaping to be performed by others.

#### 1.3 DEFINITIONS

- A. Qualified Instructor – person or persons knowledgeable in the education of technical personnel.
- B. Training Module – a period of instruction with a specific objective and subject matter.
- C. Training Plan – a written document prepared by the contractor (or designated representative) defining training module curriculum, instructors, and proposed training schedule and locations.
- D. Training Materials – a complete package of materials to support the instruction of personnel, including written course materials, tests, and presentations.
- E. CxA—Commissioning Authority

#### 1.4 SUBMITTALS

- A. Preliminary Submittal
  - 1. Training Plan Outline and Format
  - 2. Planned Training Materials
  - 3. Training Schedule Format with Tentative Dates
- B. Pre-Training Submittal

1. Final Training Plan
2. Approved Training Schedule
3. Sample Training Materials
4. Approved Training Schedule

C. Training Close-Out Submittal

1. Training Materials
2. Completed Attendance Record Sheets
3. Completed Evaluation Forms

1.5 ROLES & RESPONSIBILITIES

- A. General Contractor (GC) – will coordinate the development and planning of the project's training program. GC is ultimately responsible for the execution of this section and covering any gaps not addressed by any subcontractors.
- B. Installation Subcontractor – for systems and equipment under their scope of work, the installer is responsible for development and execution of training and coordination of manufacturer support.
- C. Manufacturer – when a vendor or manufacturer has a prepared instruction service or presentation, it may be used to supplement provided training.
- D. Maintenance Staff – will prepare for training sessions by reviewing material provided prior to the session, and attend their scheduled training as listed in the Approved Training Schedule.
- E. CxA—On commissioned projects, it is the responsibility of the CxA to assure that training is carried out to the Owner's satisfaction and includes all pieces of mechanical and electrical equipment.

1.6 SYSTEMS & EQUIPMENT COVERED

A. HVAC Systems

1. Heating Equipment
2. Cooling Equipment
3. Air Distribution
4. Ventilation Equipment
5. HVAC Controls / Building BMS

1.7 TRAINING MODULES

A. Facility Occupant Module

1. Provide an overview of the facility and its systems with the goal of educating the occupants of the facility on its features and controls.

2. Demonstrate adjustments users can make, and what impact the adjustments will have on the facility.
3. Instruct users on how to report problems and request service from the Owner's personnel.
4. Prepare a quick reference card to distribute to trainees, highlighting the items covered in this module.

B. System Training

1. The following topics will be covered for the maintenance staff:
  - a. Basis of Design, Operational Requirements
    - 1) System Documentation
    - 2) Manufacturer's Manuals
    - 3) As Built Drawings
    - 4) Site Specific Manuals
  - b. Emergency Operations
  - c. Normal Operations
  - d. Identification and Reporting of Problems
  - e. System Adjustments
  - f. Troubleshooting
  - g. Maintenance
  - h. Repairs
2. System Training will consist of classroom training, followed by hands on demonstration in the facility on the equipment being covered.

PART 2 - PRODUCTS

2.1 TRAINING MATERIAL PACKAGING

- A. Training Close-Out Submittal shall have printed materials bound and media in an approved storage case.
  1. Binders:
    - a. Sizes up to 1"
      - 1) Slant Ring Type
    - b. Sizes up to 3"
      - 1) Swing Hinge Type
      - 2) Telescoping Post Type
- B. Video Footage:
  1. To be completed by others.

PART 3 - EXECUTION

3.1 PREPARATION

A. Preliminary Submittal

1. Within ninety (90) days of Notice to Proceed (NTP), submit the preliminary training submittal to the CxA consisting of the following:
  - a. Training Plan Outline
  - b. Planned Training Materials
  - c. Training Schedule Format with Tentative Dates
  - d. Attendance Record Sheet

B. Pre-Training Submittal

1. Forty-five (45) Days prior to first scheduled training session, submit the Pre-Training Submittal to the CxA consisting of the following:
  - a. Final Training Plan
  - b. Sample Training Materials
  - c. Approved Training Schedule

C. Delivery of Training Material to Trainees

1. Thirty (30) Days prior to first scheduled training session, provide to the owner copies of training materials. Provide one complete copy for each person scheduled to attend the corresponding session and one copy to the CxA.

D. Training Location and Equipment Coordination

1. GC to coordinate locations for training sessions and availability of required support services (power, HVAC, etc)

3.2 INSTRUCTION

A. Operator Training Module

1. Conduct training session to allow appropriate building operators to attend one 30-60 minute training session.
2. Maintain a record of those individuals that attend the training session and forward a copy to the CxA at the completion of the session.

B. Maintenance Staff Training Module

1. Conduct enough training sessions to allow owner's facility staff to attend one classroom training session and one field training session.
2. For each major system and subsystem specified in Section 1.10, conduct a classroom training session of suitable length to address all system components. In addition, provide separate field training sessions to instruct trainees on all system features and components.
3. The number of attendees at these sessions will be kept below ten (10) for classroom instruction and below four (4) for field instruction.
4. Following the field instruction, evaluation forms will be completed to check retention of the information. Evaluation forms will not have trainee names on them. Forward copies to the CxA.

3.3 TRAINING CLOSE OUT

- A. Provide updated training plan and schedule with the close out submittal.
- B. Provide all training materials formatted and packaged in accordance with these specifications.
- C. Present program overview to Owner and Project Team highlighting successes and lessons learned.

**END OF SECTION 01830**

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SECTION 01900 - SUSTAINABLE DESIGN REQUIREMENTS - LEED FOR NEW CONSTRUCTION AND MAJOR RENOVATIONS

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 requirements and procedures for compliance with certain USGBC LEED prerequisites and credits needed for Project to obtain LEED [Silver] [Gold] [Platinum] certification based on USGBC's "LEED 2009 for New Construction & Major Renovations."
  - 1. Other LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
  - 2. Additional LEED prerequisites and credits needed to obtain the indicated LEED certification depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.
  - 3. A copy of the LEED Project checklist is attached at the end of this Section for information only.
  - 4. Specific requirements for LEED are included in greater detail in other Sections.

1.3 DEFINITIONS

- A. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.
- B. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured within 500 miles of Project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.
- C. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.
  - 1. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
  - 2. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Respond to questions and requests from Architect and the USGBC regarding LEED credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the USGBC has made its determination on the project's LEED certification application. Document responses as informational submittals.

1.5 ACTION SUBMITTALS

- A. General: Submit additional LEED submittals required by other Specification Sections.
- B. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to

comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.

C. LEED Documentation Submittals:

1. Credit EA 5: Product data and wiring diagrams for sensors and data collection system used to provide continuous metering of building energy-consumption performance over a period of time of not less than one year of post construction occupancy.
2. Credit MR 2: Comply with Section 017419 "Construction Waste Management and Disposal."
3. Credit MR 4: Product data and certification letter from product manufacturers indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating material cost for each product having recycled content.
4. Credit MR 5: Product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
5. Credit MR 7: Product data and chain-of-custody certificates for products containing certified wood. Include statement indicating cost for each certified wood product.
6. Credit IEQ 3.1:
  - a. Construction indoor-air-quality management plan.
  - b. Product data for temporary filtration media.
  - c. Product data for filtration media used during occupancy.
  - d. Construction Documentation: Six photographs at three different times during the construction period, along with a brief description of the SMACNA approach employed, documenting implementation of the indoor-air-quality management measures, such as protection of ducts and on-site stored or installed absorptive materials.
7. Credit IEQ 3.2:
  - a. Signed statement describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.
  - b. Product data for filtration media used during flush-out and during occupancy.
  - c. Report from testing and inspecting agency indicating results of indoor-air-quality testing and documentation showing compliance with indoor-air-quality testing procedures and requirements.
8. Credit IEQ 4.1: Product data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used.
9. Credit IEQ 4.2: Product data for paints and coatings used inside the weatherproofing system indicating VOC content of each product used.
10. Credit IEQ 4.3: Product data for all flooring elements installed inside the weatherproofing system the building interior.
11. Credit IEQ 4.4: Product data for products containing composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin.

1.6 INFORMATIONAL  
SUBMITTALS

- A. Qualification Data: For LEED coordinator designated by Contractor to monitor and submit all data required to fulfill on-line template information required as part of the certification process.
- B. Project Materials Cost Data: Provide statement indicating total cost for all permanently installed materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
  1. Furniture.
  2. Plumbing.
  3. Mechanical.
  4. Electrical.

5. Specialty items such as elevators and equipment.
  6. Wood-based construction materials.
- C. LEED Action Plans: Provide preliminary submittals within 14 days of date established for commencement of the Work indicating how the following requirements will be met:
1. Credit MR 2: Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."
  2. Credit MR 4: List of proposed materials with recycled content. Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.
  3. Credit MR 5: List of proposed regional materials. Identify each regional material, including its source, cost, and the fraction by weight that is considered regional.
  4. Credit MR 7: List of proposed certified wood products. Indicate each product containing certified wood, including its source and cost of certified wood products.
  5. Credit IEQ 3.1: Construction indoor-air-quality management plan.
- D. LEED Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with LEED action plans for the following:
1. Credit MR 2: Waste reduction progress reports complying with Section 017419 "Construction Waste Management and Disposal."
  2. Credit MR 4: Recycled content.
  3. Credit MR 5: Regional materials.
  4. Credit MR 7: Certified wood products.
- 1.7 QUALITY ASSURANCE
- A. LEED Coordinator: Engage an experienced LEED-Accredited Professional to coordinate LEED requirements. LEED coordinator may also serve as waste management coordinator.

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Provide products and procedures necessary to obtain LEED credits required in this Section. Although other Sections may specify some requirements that contribute to LEED credits, the Contractor shall determine additional materials and procedures necessary to obtain LEED credits indicated.

### 2.2 RECYCLED CONTENT OF MATERIALS

- A. Credit MR 4: Building materials shall have recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content for Project constitutes a minimum of 20 percent of cost of materials used for Project.
1. Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.
  2. Do not include plumbing, mechanical and electrical components, and specialty items such as elevators and equipment in the calculation.

### 2.3 REGIONAL MATERIALS

- A. Credit MR 5: Not less than 20 percent of building materials (by cost) shall be regional materials.

### 2.4 CERTIFIED WOOD

- A. Credit MR 7: Not less than 50 percent (by cost) of all wood-based materials installed permanently in the Project shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

1. Wood-based materials include, but are not limited to, the following materials when made from wood, engineered wood products, or wood-based panel products:
  - a. Rough carpentry.
  - b. Miscellaneous carpentry.
  - c. Finish carpentry.
  - d. Architectural woodwork.
  - e. Wood paneling.
  - f. Wood cabinets.
  - g. Furniture.

## 2.5 LOW-EMITTING MATERIALS

- A. Credit IEQ 4.1: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Metal-to-Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Single-Ply Roof Membrane Adhesive: 250 g/L.
20. Special-Purpose Contact Adhesive (contact adhesive that is used to bond melamine- covered board, metal, unsupported vinyl, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
21. Top and Trim Adhesive: 250 g/L.
22. Plastic Cement Welding Compounds: 250 g/L.
23. ABS Welding Compounds: 325 g/L.
24. CPVC Welding Compounds: 490 g/L.
25. PVC Welding Compounds: 510 g/L.
26. Adhesive Primer for Plastic: 550 g/L.
27. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
30. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Non-membrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

- B. Credit IEQ 4.2: For field applications that are inside the weatherproofing system, paints and coatings shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: VOC not more than 50 g/L.
  2. Non-flat Paints and Coatings: VOC not more than 150 g/L.
  3. Dry-Fog Coatings: VOC not more than 400 g/L.
  4. Primers, Sealers, and Under-coaters: VOC not more than 200 g/L.
  5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  6. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
  7. Pretreatment Wash Primers: VOC not more than 420 g/L.
  8. Clear Wood Finishes, Varnishes: VOC not more than 350 g/L.
  9. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
  10. Floor Coatings: VOC not more than 100 g/L.
  11. Shellacs, Clear: VOC not more than 730 g/L.
  12. Shellacs, Pigmented: VOC not more than 550 g/L.
  13. Stains: VOC not more than 250 g/L.
- C. Credit IEQ 4.4: Composite wood, agrifiber products, and adhesives shall not contain urea-formaldehyde resin.

### PART 3 - EXECUTION

#### 3.1 MEASUREMENT AND VERIFICATION

- A. Credit EA 5: Implement measurement and verification plan consistent with [Option B: Energy Conservation Measure Isolation] [Option D: Calibrated Simulation, Savings Estimation Method 2] in the EVO's "International Performance Measurement and Verification Protocol (IPMVP), Volume III: Concepts and Options for Determining Energy Savings in New Construction," and as further defined by the following:
- B. Install metering equipment to measure energy usage. Monitor, record, and trend log measurements.
- C. Evaluate energy performance and efficiency by comparing actual to predicted performance.
- D. Measurement and verification period shall cover at least one year of post construction occupancy.

#### 3.2 CONSTRUCTION WASTE MANAGEMENT

- A. Credit MR 2: Comply with Section 01720 "Construction Waste Management and Disposal."

#### 3.3 CONSTRUCTION INDOOR-AIR-QUALITY

##### MANAGEMENT A. Credit IEQ 3.2:

1. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14000 cu. ft. of outdoor air per sq. ft. of floor area while maintaining an internal temperature of at least 60 degree F and a relative humidity no higher than 60 percent.
2. Air-Quality Testing:
  - a. Conduct baseline indoor-air-quality testing, after construction ends and prior to occupancy, using testing protocols consistent with the EPA's "Compendium of Methods for the Determination of Air Pollutants in Indoor Air," and as additionally detailed in the USGBC's "Green Building Design and Construction Reference Guide."
  - b. Demonstrate that the contaminant maximum concentrations listed below are not exceeded:
    - 1) Formaldehyde: 27 ppb.
    - 2) Particulates (PM10): 50 micrograms/cu. m.
    - 3) Total Volatile Organic Compounds (TVOC): 500 micrograms/cu. m.
    - 4) 4-Phenylcyclohexene (4-PH): 6.5 micrograms/cu. m.
    - 5) Carbon Monoxide: 9 ppm and no greater than 2 ppm above outdoor levels.

- c. For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting noncomplying building areas take samples from the same locations as in the first test.
- d. Air-sample testing shall be conducted as follows:
  - 1) All measurements shall be conducted prior to occupancy but during normal occupied hours, and with building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.
  - 2) Building shall have all interior finishes installed including, but not limited to, millwork, doors, paint, carpet, and acoustic tiles. Non-fixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.
  - 3) Number of sampling locations varies depending on the size of building and number of ventilation systems. For each portion of building served by a separate ventilation system, the number of sampling points shall not be less than one per 25,000 sq. ft. or for each contiguous floor area, whichever is larger, and shall include areas with the least ventilation and greatest presumed source strength.
  - 4) Air samples shall be collected between 3 and 6 feet from the floor to represent the breathing zone of occupants, and over a minimum four-hour period.

END OF SECTION 01900

SECTION 01950 – RELEASE OF ELECTRONIC MEDIA

**STANDARD FORM OF AGREEMENT FOR RELEASE OF ELECTRONIC MEDIA (AUTOCAD FILES)1 PAGE**

Each and every Trade Contractor, Sub-Contractor, and Sub Sub-Contractor including the Constuction Manager that desires to use the electronic media generated by the Architect for the Project shall fill out and endorse the following form. Upon receipt and validation by the Architedt the Electronic Media will be made available.

The electronic media shall be used in strict accordance with this agreement and shall not be used for any other purpose than in pursuit of this specific project and application.

No other agreements as to the use of the media shall be valid for any purpose and this agreement can only be modified by both parties to the agreement in writing acknowledged and endorsed by each party.

See attached form that follows:

END OF SECTION 01950

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**AGREEMENT FOR RELEASE OF ELECTRONIC MEDIA**

**DATE:**  
**USER:**  
**PROJECT: DSU - OSCAR**

Richard+Bauer Architects, LLC (R+B) agrees to provide electronic FILES for the referenced project (PROJECT) to USER. These electronic FILES are not sealed construction documents. R+B makes no representation regarding the accuracy or completeness of the electronic FILES you receive, for the referenced PROJECT, subject to the following conditions.

Therefore, USER agrees as follows:

- 1 Due to the potential that the information set forth on the electronic media (referred to herein as "FILE(S)") can be modified unintentionally or otherwise, R+B shall reserve the right to remove all indicia of its ownership, professional corporation name, and/or involvement from each electronic medium (and its contents) not in its possession.
- 2 USER recognizes that use of such FILE will be at their own risk and without any liability, risk or legal exposure to R+B. Furthermore, USER will, to the fullest extent permitted by law, indemnify and hold R+B, harmless from any and all claims, suits, liability, demands, or costs arising out of or resulting there from, including reasonable attorneys' fees and defense costs, arising out of or resulting from USER's use of these electronic FILES.
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- 4 USER recognizes that information stored on electronic media including, but not limited to, computer FILES prepared by R+B may not be compatible with their own computer system due to differences in computer hardware and software. Therefore, USER agrees that R+B shall not be held liable for the completeness or accuracy of any materials or documents prepared from such FILE or data contained on such FILE.
- 5 USER recognizes that designs, plans, and data stored on electronic media, including, but not limited to, computer FILES, may be subject to a virus, undetectable alteration and/or uncontrollable deterioration. USER therefore agrees that R+B shall not be held liable for any damage due to a virus, alteration and/or deterioration. USER also agrees that R+B shall not be held liable for the completeness or accuracy of any data or information contained on electronic media after USER's possessing of said media for thirty (30) days or longer.
- 6 USER recognizes that FILES provided herein may be subject to change. USER agrees that R+B shall not be held liable for the completeness or accuracy of any data or information contained on FILE. It is the USER's responsibility to coordinate and make corrections on their plans to reflect the latest design. Differences may exist between these electronic FILES and corresponding hard-copy sealed construction documents. In the event that a conflict arises between the signed hard-copy sealed construction documents prepared by R+B and the electronic FILES, the signed or sealed hard-copy construction documents shall govern. USER is responsible for determining if any conflict exists.
- 7 By your use of these electronic FILES, you are not relieved of your duty to fully comply with the sealed contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of others in relation to this PROJECT.
- 8 Under no circumstances shall delivery of the electronic files for use by you be deemed a sale by R+B, and we make no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall we be liable for any loss of profit or any consequential damages as a result of USER use or reuse of these electronic FILES.

Agreed to this date by:

<b>Accepted By</b>	<b>Approved By</b>
<b>Contractor Firm Name (USER)</b>	<b>Richard+Bauer,LLC</b>
<b>Printed Name and Title</b>	<b>Printed Name and Title</b>
<b>Date</b>	<b>Date</b>

**AGREEMENT FOR RELEASE OF ELECTRONIC MEDIA**

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