

UNIVERSITY of NEW ORLEANS

BID SPECIFICATIONS FOR
JOB ENTITLED

FUME HOOD CONTROLS REPLACEMENT – PHASE I
CHEMICAL SCIENCE BLDG
STATE PROJECT #01-107-24-05, F.01004601
SITE CODE 1-36-038, SITE ID 12533

Sealed Bid #BTB 2859

Bid Date: **May 22, 2025**

Bid Time: 2:00 p.m.

Pre-Bid Conference:

Date: **May 13, 2025**

10:00 a.m. at the

CHEMICAL SCIENCE ANNEX - LOUNGE 101



THE UNIVERSITY of
NEW ORLEANS

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ADVERTISEMENT FOR BIDS

Sealed bids will be received at the University of New Orleans Purchasing Office, Administration Annex Bldg, Room 1000G, New Orleans, LA 70148. The deadline for receipt of bids is **2:00 PM** on **May22, 2025**, at which time bids will be publicly opened for the following:

FOR: Chemical Science Annex Fume Hood Controls Replacement – Phase I

PROJECT NUMBER: 01-107-24-05, F.01004601

Complete Bid Documents for this project are available in electronic form. They may be obtained without charge and without deposit from Crumb Engineering, LLC. Printed copies are not available from the Designer, but arrangements can be made to obtain them through most reprographic firms. Plan holders are responsible for their own reproduction costs. Questions about this procedure shall be directed to the Designer at:

Crumb Engineering, LLC

4609 Fairfield Street Metairie, LA 70006

504.455.4450

jcrumb@crumbengineering.com

All bids shall be accompanied by bid security in an amount of five percent (5.0%) of the sum of the base bid and all alternates. The form of this security shall be as stated in the Instructions to Bidders included in the Bid Documents for this project.

The successful Bidder shall be required to furnish a Performance and Payment Bond written as described in the Instructions to Bidders included in the Bid Documents for this project.

A PRE-BID CONFERENCE WILL BE HELD

at 10:00 am on Thursday, May 13, 2025 at Chemical Science Annex, Lounge 101

Bids shall be accepted from Contractors who are licensed under LA. R.S. 37:2150-2192 for the classification of **Mechanical work**. Bidder is required to comply with provisions and requirements of LA R.S. 38:2212(B)(5). No bid may be withdrawn for a period of forty-five (45) days after receipt of bids, except under the provisions of LA. R.S. 38:2214.

The Owner reserves the right to reject any and all bids for just cause. In accordance with La. R.S. 38:2212(B)(1), the provisions and requirements of this Section; and those stated in the bidding documents shall not be waived by any entity.

University of New Orleans is a participant in the Small Entrepreneurship (SE) Program (the Hudson Initiative) and the Veteran-Owned and Service-Connected Disabled Veteran-Owned (LaVet) Small Entrepreneurships Program. Bidders are encouraged to consider participation. Information is available from the University of New Orleans Purchasing Office.

If you have a disability and would like to request an accommodation in order to participate in this meeting, please contact Melanie Champagne at mmchamp2@uno.edu or (504) 280-3237 as soon as possible but no later than 48 hours before the scheduled meeting.

Ad Dates: 4/22/2025

4/29/2025

5/6/2025

INSTRUCTIONS TO BIDDERS

COMPLETION TIME:

The Bidder shall agree to fully complete the contract within **180** consecutive calendar days, subject to such extensions as may be granted under Paragraph 8.3, in the General Conditions and the Supplementary Conditions, and acknowledges that this construction time will start on or before the date specified in the written "Notice to Proceed" from the Owner.

LIQUIDATED DAMAGES:

The Bidder shall agree to pay as Liquidated Damages the amount of **Three Hundred Dollars (\$300.00)** for each consecutive calendar day for which the work is not complete, beginning with the first day beyond the contract completion date stated on the "Notice to Proceed" or as amended by change order.

ARTICLE 1

DEFINITIONS

1.1 The Bid Documents include the following:

Advertisement for Bids
Instructions to Bidders
Bid Form
Bid Bond
General Conditions of the Contract for Construction,
AIA Document A201, 2017 Edition
Supplementary Conditions
Contract Between Owner and Contractor and Performance and Payment Bond
Affidavit
User Agency Documents (if applicable)
Change Order Form
Partial Occupancy Form
Recommendation of Acceptance
Asbestos Abatement (if applicable)
Other Documents (if applicable)
Specifications & Drawings
Addenda issued during the bid period and acknowledged in the Bid Form

1.2 All definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201 and the Supplementary Conditions are applicable to the Bid Documents.

1.3 Addenda are written and/or graphic instruments issued by the Architect prior to the opening of bids, which modify or interpret the Bid Documents by additions, deletions, clarifications, corrections and prior approvals.

1.4 A bid is a complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein supported by data called for by the Bid Documents.

1.5 Base bid is the sum stated in the bid for which the Bidder offers to perform the work described as the base, to which work may be added, or deleted for sums stated in alternate bids.

1.6 An alternate bid (or alternate) is an amount stated in the bid to be added to the amount of the base bid if the corresponding change in project scope or materials or methods of construction described in the Bid Documents is accepted.

1.7 A Bidder is one who submits a bid for a prime Contract with the Owner for the work described in the Bid Documents.

1.8 A Sub-bidder is one who submits a bid to a Bidder for materials and/or labor for a portion of the work.

1.9 Where the word "Architect" is used in any of the documents, it shall refer to the Prime Designer of the project, regardless of discipline.

ARTICLE 2

PRE-BID CONFERENCE

2.1 A Pre-Bid Conference shall be held at least 10 days before the date for receipt for bids. The Architect shall coordinate the setting of the date, time and place for the Pre-Bid Conference with the User Agency and shall notify in writing the Owner and all who have received sets of the Bid Documents to

attend. The purpose of the Pre-Bid Conference is to familiarize Bidders with the requirements of the Project and the intent of the Bid Documents, and to receive comments and information from interested Bidders. If the Pre-Bid Conference is stated in the Advertisement for Bids to be a Mandatory Pre-Bid Conference, bids shall be accepted only from those bidders who attend the Pre-Bid Conference. Contractors who are not in attendance for the **entire** Pre-Bid Conference will be considered to have not attended.

2.2 Any revision of the Bid Documents made as a result of the Pre-Bid Conference shall not be valid unless included in an addendum.

ARTICLE 3

BIDDER'S REPRESENTATION

3.1 Each Bidder by making his bid represents that:

3.1.1 He has read and understands the Bid Documents and his bid is made in accordance therewith.

3.1.2 He has visited the site and has familiarized himself with the local conditions under which the work is to be performed.

3.1.3 His bid is based solely upon the materials, systems and equipment described in the Bid Documents as advertised and as modified by addenda.

3.1.4 His bid is not based on any verbal instructions contrary to the Bid Documents and addenda.

3.1.5 He is familiar with Code of Governmental Ethics requirement that prohibits public servants and/or their immediate family members from bidding on or entering into contracts; he is aware that the Designer and its principal owners are considered Public Servants under the Code of Governmental Ethics for the limited purposes and scope of the Design Contract with the State on this Project (see Ethics Board Advisory Opinion, No. 2009-378 and 2010-128); and neither he nor any principal of the Bidder with a controlling interest therein has an immediate family relationship with the Designer or any principal within the Designer's firm (see La. R.S.

42:1113). Any Bidder submitting a bid in violation of this clause shall be disqualified and any contract entered into in violation of this clause shall be null and void.

3.2 The Bidder must be fully qualified under any State or local licensing law for Contractors in effect at the time and at the location of the work before submitting his bid. In the State of Louisiana, Revised Statutes 37:2150, et seq. will be considered, if applicable.

The Contractor shall be responsible for determining that all of his Sub-bidders or prospective Subcontractors are duly licensed in accordance with law.

ARTICLE 4

BID DOCUMENTS

4.1 Copies

4.1.1 Bid Documents may be obtained from the Engineer for a deposit as stated in the Advertisement for Bids. The deposit will be refunded as stated in the Advertisement for Bids. No deposits will be refunded on Bid Documents returned later than ten days after receipt of bids.

4.1.1.2 As an alternative method of distribution, the Designer may provide the Bid Documents in electronic format. They may be obtained without charge and without deposit as stated in the Advertisement for Bids.

4.1.1.2.1 If electronic distribution is available, printed copies will not be available from the Designer, but arrangements can be made to obtain them through most reprographic firms and/or plan rooms.

4.1.1.2.2 If electronic distribution is available, the reproduction cost on the first paper plan set acquired by bona fide prime bidders will be fully refunded by the Designer upon delivery of the documents to the Designer in good condition no later than ten days after receipt of bids.

4.1.1.2.3 If electronic distribution is available, all other plan holders are responsible for their own reproduction costs.

4.1.2 Complete sets of Bid Documents shall be used in preparing bids; neither the Owner nor the Architect assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

4.1.3 The Owner or Architect in making copies of the Bid Documents available on the above terms, do so only for the purpose of obtaining bids on the work and do not confer a license or grant for any other use.

4.2 Interpretation or Correction of Bid Documents

4.2.1 Bidders shall promptly notify the Architect of any ambiguity, inconsistency or error which they may discover upon examination of the Bid Documents or of the site and local conditions.

4.2.2 Bidders requiring clarification or interpretation of the Bid Documents shall make a written request to the Architect, to reach him at least seven days prior to the date for receipt of bids.

4.2.3 Any interpretation, correction or change of the Bid Documents will be made by addendum. Interpretations, corrections or changes of the Bid Documents made in any other manner will not be binding and Bidders shall not rely upon such interpretations, corrections and changes.

4.3 Substitutions

4.3.1 The materials, products and equipment described in the Bid Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitutions shall be allowed after bids are received.

4.3.2 No substitution will be considered unless written request for approval has been submitted by the Proposer and has been received by the Architect at least fourteen (14) working days prior to the opening of bids. (La. R.S. 38:2295(C)) Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including model numbers, drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require

shall be included. It shall be the responsibility of the proposer to include in his proposal all changes required of the Bid Documents if the proposed product is used. Prior approval, if given, is contingent upon supplier being responsible for any costs which may be necessary to modify the space or facilities needed to accommodate the materials and equipment approved.

4.3.3 If the Architect approves any proposed substitution, such approval shall be set forth in an addendum. Bidders shall not rely upon approvals made in any other manner.

4.4 Addenda

4.4.1 Addenda will be transmitted to all who are known by the Architect to have received a complete set of Bid Documents.

4.4.2 Copies of addenda will be made available for inspection wherever Bid Documents are on file for that purpose.

4.4.3 Except as described herein, addenda shall not be issued within a period of seventy-two (72) hours prior to the advertised time for the opening of bids, excluding Saturdays, Sundays, and any other legal holidays. If the necessity arises of issuing an addendum modifying plans and specifications within the seventy-two (72) hour period prior to the advertised time for the opening of bids, then the opening of bids shall be extended at least seven but no more than twenty-one (21) working days, without the requirement of re-advertising. Facility Planning shall be consulted prior to issuance of such an addendum and shall approve such issuance. The revised time and date for the opening of bids shall be stated in the addendum.

4.4.4 Each Bidder shall ascertain from the Architect prior to submitting his bid that he has received all addenda issued, and he shall acknowledge their receipt on the Bid Form.

4.4.5 The Owner shall have the right to extend the bid date by up to (30) thirty days without the requirement of re-advertising. Any such extension shall be made by addendum issued by the Architect.

ARTICLE 5

BID PROCEDURE

5.1 Form and Style of Bids

5.1.1 Bids shall be submitted on the Louisiana Uniform Public Work Bid Form provided by the Architect for this project.

5.1.2 The Bidder shall ensure that all applicable blanks on the bid form are completely and accurately filled in.

5.1.3 Bid sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written words shall govern.

5.1.4 Any interlineation, alteration or erasure must be initialed by the signer of the bid or his authorized representative.

5.1.5 Bidders are cautioned to complete all alternates should such be required in the Bid Form. Failure to submit alternate prices will render the bid non responsive and shall cause its rejection.

5.1.6 Bidders are cautioned to complete all unit prices should such be required in the Bid Form. Unit prices represent a price proposal to do a specified quantity and quality of work. Unit prices are incorporated into the base bid or alternates, as indicated on the Unit Price Form, but are not the sole components thereof.

5.1.7 Bidder shall make no additional stipulations on the Bid Form nor qualify his bid in any other manner.

5.1.8 Written evidence of the authority of the person signing the bid for the public work shall be submitted in accordance with La. R.S. 38:2212 (B)(5).

5.1.9 On any bid in excess of fifty thousand dollars (\$50,000.00), the Contractor shall certify that he is licensed under La. R.S. 37: 2150-2173 and show his license number on the bid above his signature or his duly authorized representative.

5.2 Bid Security

5.2.1 No bid shall be considered or accepted unless the bid is accompanied by bid security in an amount of five percent (5.0%) of the base bid and all alternates.

The bid security shall be in the form of a certified check or cashier's check drawn on a bank insured by the Federal Deposit Insurance Corporation, or a Bid Bond written by a surety company licensed to do business in Louisiana and signed by the surety's agent or attorney-in-fact. The Bid Bond shall be written on the University of New Orleans Bid Bond Form, and the surety for the bond must meet the qualifications stated thereon. The Bid Bond shall include the legal name of the bidder be in favor of the State of Louisiana, University of New Orleans , and shall be accompanied by appropriate power of attorney. The Bid Bond must be signed by both the bidder/principal and the surety in the space provided on the University of New Orleans Bid Bond Form. Failure by the bidder/principal or the surety to sign the bid bond shall result in the rejection of the bid.

Bid security furnished by the Contractor shall guarantee that the Contractor will, if awarded the work according to the terms of his proposal, enter into the Contract and furnish Performance and Payment Bonds as required by these Bid Documents, within fifteen (15) days after written notice that the instrument is ready for his signature.

Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as penalty.

5.2.2 The Owner will have the right to retain the bid security of Bidders until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that bids may be withdrawn, or (c) all bids have been rejected.

5.3 Submission of Bids

5.3.1 The Bid shall be sealed in an opaque envelope. The bid envelope shall be identified on the outside with the name of the project, and the name, address, and license number of the Bidder.

The envelope shall not contain multiple bid forms, and will be received until the time specified and at the place specified in the Advertisement for Bids. It shall be the specific responsibility of the Bidder to deliver his sealed bid to University of New Orleans Purchasing Department at the appointed place and prior to the announced time for the opening of bids.

Late delivery of a bid for any reason, including late delivery by United States Mail, or express delivery, shall disqualify the bid.

If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "Bid Enclosed" on the face thereof. Such bids shall be sent by Registered or Certified Mail, Return Receipt Requested, addressed to:

University of New Orleans - Purchasing
Suite 1004, Room G
Administration Annex Building
2000 Lakeshore Drive
New Orleans, Louisiana 70148

Bids sent by express delivery shall be delivered to:
University of New Orleans - Purchasing
Suite 1004, Room G
Administration Annex Building
6652 Milneburg Road
New Orleans, Louisiana 70148

5.3.2 Bids shall be deposited at the designated location prior to the time on the date for receipt of bids indicated in the Advertisement for Bids, or any extension thereof made by addendum. Bids received after the time and date for receipt of bids will be returned unopened.

5.3.3 Bidder shall assume full responsibility for timely delivery at location designated for receipt of bids.

5.3.4 Oral, telephonic or telegraphic bids are invalid and shall not receive consideration. Owner shall not consider notations written on outside of bid envelope which have the effect of amending the bid. Written modifications enclosed in the bid envelope, and signed or initialed by the Contractor or his representative, shall be accepted.

5.4 Modification or Withdrawal of Bid

5.4.1 A bid may not be modified, withdrawn or canceled by the Bidder during the time stipulated in the Advertisement for Bids, for the period following the time and bid date designated for the receipt of bids, and Bidder so agrees in submitting his bid, except in accordance with R.S. 38:2214 which states, in part, "Bids containing patently obvious, unintentional, and substantial mechanical, clerical, or mathematical errors, or errors of unintentional omission of a substantial quantity of work, labor,

material, or services made directly in the compilation of the bid, may be withdrawn by the contractor if clear and convincing sworn, written evidence of such errors is furnished to the public entity within forty-eight hours of the bid opening excluding Saturdays, Sundays, and legal holidays".

5.4.2 Prior to the time and date designated for receipt of bids, bids submitted early may be modified or withdrawn only by notice to the party receiving bids at the place and prior to the time designated for receipt of bids.

5.4.3 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids provided that they are then fully in conformance with these Instructions to Bidders.

5.4.4 Bid Security shall be in an amount sufficient for the bid as modified or resubmitted.

5.5 Prohibition of Discriminatory Boycotts of Israel

By submitting a bid, the bidder certifies and agrees that the following information is correct:

In preparing its bid, the bidder has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israel-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The bidder has also not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. The state reserves the right to reject any bid if this certification is subsequently determined to be false and to terminate any contract awarded based on such a false response.

ARTICLE 6

CONSIDERATION OF BIDS

6.1 Opening of Bids

6.1.1 The properly identified Bids received on time will be opened publicly and will be read aloud,

and a tabulation abstract of the amounts of the base bids and alternates, if any, will be made available to Bidders.

6.2 Rejection of Bids

6.2.1 The Owner shall have the right to reject any or all bids and in particular to reject a bid not accompanied by any required bid security or data required by the Bid Documents or a bid in any way incomplete or irregular.

6.3 Acceptance of Bid

6.3.1 It is the intent of the Owner, if he accepts any alternates, to accept them in the order in which they are listed in the Bid Form. Determination of the Low Bidder shall be on the basis of the sum of the base bid and the alternates accepted. However, the Owner shall reserve the right to accept alternates in any order which does not affect determination of the Low Bidder.

ARTICLE 7

POST-BID INFORMATION

7.1 Submissions

7.1.1 At the Pre-Construction Conference, the Contractor shall submit the following information to the Architect.

7.1.1.1 A designation of the work to be performed by the Contractor with his own forces.

7.1.1.2 A breakdown of the Contract cost attributable to each item listed in the Schedule of Values Form (attached). No payments will be made to the Contractor until this is received.

7.1.1.3 The proprietary names and the suppliers of principal items or systems of material and equipment proposed for the work.

7.1.1.4 A list of names and business domiciles of all Subcontractors, manufacturers, suppliers or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the work. It is the preference of the Owner that, to the greatest extent possible or practical, the Contractor

utilize Louisiana Subcontractors, manufacturers, suppliers and labor.

7.1.2 The General Contractor shall be responsible for actions or inactions of Subcontractors and/or material suppliers.

The General Contractor is totally responsible for any lost time or extra expense incurred due to a Subcontractor's or Material Supplier's failure to perform. Failure to perform includes, but is not limited to, a Subcontractor's financial failure, abandonment of the project, failure to make prompt delivery, or failure to do work up to standard. Under no circumstances shall the Owner mitigate the General Contractor's losses or reimburse the General Contractor for losses caused by these events.

7.1.3 The lowest responsive and responsible bidder shall submit to the Architect and the Owner within ten days after the bid opening a letter/letters from the manufacturer stating that the manufacturer will issue the roof system guarantee complying with the requirements of Facility Planning and Control based on the specified roof system and include the name of the applicator acceptable to the manufacturer at the highest level of certification for installing the specified roof system. This manufacturer shall be one that has received prior approval or is named in the specifications.

In accordance with La. R.S. 38:2227 [references La R.S. 38:2212(A)(3)(c)(ii), which has since been renumbered as La R.S. 38:2212(B)(3)], La. R.S. 38:2212.10 and La. R.S. 23:1726(B) the apparent low bidder on this project shall submit the completed Attestations Affidavit (Past Criminal Convictions of Bidders, Verification of Employees and Certification Regarding Unpaid Workers Compensation Insurance) form found within this bid package to University of New Orleans within 10 days after the opening of bids.

ARTICLE 8

PERFORMANCE AND PAYMENT BOND

8.1 Bond Required

8.1.1 The Contractor shall furnish and pay for a Performance and Payment Bond written by a company licensed to do business in Louisiana, which

shall be signed by the surety's agent or attorney-in-fact, in an amount equal to 100% of the Contract amount. Surety must be listed currently on the U. S. Department of Treasury Financial Management Service List (Treasury List) as approved for an amount equal to or greater than the contract amount, or must be an insurance company domiciled in Louisiana or owned by Louisiana residents. If surety is qualified other than by listing on the Treasury list, the contract amount may not exceed fifteen percent of policyholders' surplus as shown by surety's most recent financial statements filed with the Louisiana Department of Insurance and may not exceed the amount of \$500,000. However, a Louisiana domiciled insurance company with at least an A- rating in the latest printing of the A. M. Best's Key Rating Guide shall not be subject to the \$500,000 limitation, provided that the contract amount does not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide nor fifteen percent of policyholders' surplus as shown by surety's most recent financial statements filed with the Louisiana Department of Insurance. The Bond shall be signed by the surety's agent or attorney-in-fact. The Bond shall be in favor of the State of Louisiana, University of New Orleans .

8.2 Time of Delivery and Form of Bond

8.2.1 The Bidder shall deliver the required bond to the Owner simultaneous with the execution of the Contract.

8.2.2 Bond shall be in the form furnished by Facility Planning and Control, entitled CONTRACT BETWEEN OWNER AND CONTRACTOR AND PERFORMANCE AND PAYMENT BOND, a copy of which is included in the Bid Documents.

8.2.3 The Bidder shall require the Attorney-in-Fact who executes the required bond on behalf of the surety to affix thereto a certified and current copy of his power of Attorney.

ARTICLE 9

FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

9.1 Form to be Used

9.1.1 Form of the Contract to be used shall be furnished by University of New Orleans, an example of which is bound in the Bid Documents.

9.2 Award

9.2.1 After award of the Contract, the successful Bidder, if a corporation, shall furnish to the Owner the most current copy of a Disclosure of Ownership Affidavit on file with the Secretary of State.

9.2.2 In accordance with Louisiana Law, when the Contract is awarded, the successful Bidder shall, at the time of the signing of the Contract, execute the Non-Collusion Affidavit included in the Contract Documents

9.2.3 When this project is financed either partially or entirely with State Bonds, the award of this Contract is contingent upon the sale of bonds by the State Bond Commission. The State shall incur no obligation to the Contractor until the Contract Between Owner and Contractor is duly executed.

9.2.4 The Contractor at his own expense, shall record the original executed Contract and the Performance and Labor and Material Bond with the Recorder of Mortgages, Orleans Parish, within five (5) working days of Contract signing. A NOTICE OF THIS RECORDING SHALL BE SENT TO THE UNIVERSITY OF NEW ORLEANS PURCHASING OFFICE BEFORE A NOTICE TO PROCEED IS ISSUED.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: University of New Orleans – Main Campus
Purchasing Office
Administration Annex, Room 1004G
New Orleans, Louisiana 70148
(Owner to provide name and address of owner)

BID FOR: Fume Hood Controls Replacement – Phase 1
Chemical Science Building
SP5285 BTB2859
STATE PROJECT #01-107-24-05, F.01004601
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Crumb Engineering, LLC dated 01-23-2025.

(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____ .

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated “Base Bid” * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A _____ Dollars (\$ _____)

Alternate No. 2 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A _____ Dollars (\$ _____)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A _____ Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR’S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier’s check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: University of New Orleans – Main Campus
Purchasing Office
Administration Annex, Room 1004G
New Orleans, Louisiana 70148
(Owner to provide name and address of owner)

BID FOR: Fume Hood Controls Replacement – Phase 1
Chemical Science Building
SP5285 BTB2859
STATE PROJECT #01-107-24-05, F.01004601
(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

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REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
N/A	N/A	N/A	N/A	N/A

Wording for “DESCRIPTION” is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

BID BOND

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____, as Principal, and _____, as Surety, are held and firmly bound unto the State of Louisiana, University of New Orleans (Obligee), in the full and just sum of five (5%) percent of the total amount of this proposal, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater than the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

PRINCIPAL (BIDDER)

SURETY

BY: _____
AUTHORIZED OFFICER-OWNER-PARTNER

BY: _____
AGENT OR ATTORNEY-IN-FACT(SEAL)

July 2021

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)

Owner

Owner

Owner

THE ARCHITECT:
(Name, legal status and address)

Crumb Engineering, LLC

4609 Fairfield St

Metairie, LA 70006

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This document has important legal consequences.

Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

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

§ 1.2 Correlation and Intent of the Contract Documents

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

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

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

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

§ 1.6 Notice

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

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

§ 1.7 Digital Data Use and Transmission

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

§ 1.8 Building Information Models Use and Reliance

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

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

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

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

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

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

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

§ 2.3 Information and Services Required of the Owner

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

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

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

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in

such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

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

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

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or

equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

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

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

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

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

§ 3.9 Superintendent

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

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

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

§ 3.10 Contractor's Construction and Submittal Schedules

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

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

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

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

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

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

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

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

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

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

ARTICLE 4 ARCHITECT

§ 4.1 General

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

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

§ 4.2 Administration of the Contract

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

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

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

§ 4.2.4 Communications

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

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

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

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of

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other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

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

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

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

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

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

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

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

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

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

§ 6.2 Mutual Responsibility

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

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

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

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

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

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

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

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

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

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

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

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

§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.3 Delays and Extensions of Time

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

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

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

(3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

§ 9.5 Decisions to Withhold Certification

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

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

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

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

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

§ 9.6 Progress Payments

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

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

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

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

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

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

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

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

§ 9.7 Failure of Payment

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

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

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

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

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

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

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

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

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

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.1.8.

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

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

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

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

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

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

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

§ 11.2 Owner's Insurance

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

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

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

an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

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

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

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

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

§ 11.5 Adjustment and Settlement of Insured Loss

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

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

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

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

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

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

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

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in

Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

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

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

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

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

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

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

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

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

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

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

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

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

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

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

§ 14.3 Suspension by the Owner for Convenience

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

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

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

§ 14.4 Termination by the Owner for Convenience

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

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

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

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

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

§ 15.1.2 Time Limits on Claims

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

§ 15.1.3 Notice of Claims

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

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

§ 15.1.4 Continuing Contract Performance

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

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

§ 15.1.5 Claims for Additional Cost

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

§ 15.1.6 Claims for Additional Time

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

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

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

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

§ 15.2 Initial Decision

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

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

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

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

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

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

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

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

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

§ 15.3 Mediation

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

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

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

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

§ 15.4 Arbitration

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

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

for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

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

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

§ 15.4.4 Consolidation or Joinder

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

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

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

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions modify, change, delete from or add to the General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition. Where any Article of the General Conditions is modified or any Section, Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Section, Article, Paragraph, Subparagraph or Clause shall remain in effect.

Articles, Sections, Paragraphs, Subparagraphs or Clauses modified or deleted have the same numerical designation as those occurring in the General Conditions.

ARTICLE 1

GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1. The Contract Documents

In Section 1.1.1 delete the third sentence, and add the following sentence:

The Contract Documents shall include the Bid Documents as listed in the Instructions to Bidders and any modifications made thereto by addenda.

1.1.8 Initial Decision Maker

Delete all after the words, “shall not show partiality to the Owner or Contractor”.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE [REFER TO *La R.S. 38:2317*]

1.5.1 Delete the first sentence of the paragraph.

1.5.1 In the third sentence: delete the remainder after the word “publication”.

1.7 DIGITAL DATA USE AND TRANSMISSION

In the first sentence after the words, “in digital form” delete “. The parties will use AIA Document E203 2013, Building Information Modeling and Digital Data Exhibit”.

1.8 BUILDING INFORMATION MODELS USE AND RELIANCE

Delete Section 1.8.

ARTICLE 2

OWNER

2.2 EVIDENCE OF THE OWNER’S FINANCIAL ARRANGEMENTS

Delete Section 2.2.

2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.3.1 In the first sentence, delete: all before “the Owner shall secure...”

Delete Section 2.3.2 and substitute the following:

2.3.2 The term Architect, when used in the Contract Documents, shall mean the prime Designer (Architect, Engineer, or Landscape Architect), or his authorized representative, lawfully licensed to practice architecture, engineering, or landscape architecture in the State of Louisiana, identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.

2.3.3 Delete the words: “to whom the Contractor has no reasonable objection and”.

ARTICLE 3

CONTRACTOR

3.4 LABOR AND MATERIALS

3.4.2 Delete Section 3.4.2.

Delete Section 3.4.3 and substitute with the following:

3.4.3 Contractor and its employees, officers, agents, representatives, and Subcontractors shall conduct themselves in an appropriate and professional manner, in accordance with the Owner’s requirements, at all times while working on the Project. Any such individual who behaves in an inappropriate manner or who engages in the use of inappropriate language or conduct while on Owner’s property, as determined by the Owner, shall be removed from the Project at the Owner’s request. Such individual shall not be permitted to return without the written permission of the Owner. The Owner shall not be responsible or liable to Contractor or any Subcontractor for any additional costs, expenses, losses, claims or damages incurred by Contractor or its Subcontractor as a result of the removal of an individual from the Owner’s property pursuant to this Section. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

3.5 WARRANTY

3.5.2 Replace reference to “Section 9.8.4” with “Section 9.8.6”.

3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS (La R.S. 40:1724[A])

3.7.1 Delete Section 3.7.1.

3.7.2 In Section 3.7.2, replace the word “public” with the word “State”.

Delete Section 3.7.5 and substitute the following:

- 3.7.5 If, during the course of the Work, the Contractor discovers human remains, unmarked burial or archaeological sites, burial artifacts, or wetlands, which are not indicated in the Contract Documents, the Contractor shall follow all procedures mandated by State and Federal law, including but not limited to La R.S. 8:671 et seq., the Office of Coastal Protection and Restoration, and Sections 401 & 404 of the Federal Clean Water Act. Request for adjustment of the Contract Sum and Contract Time arising from the existence of such remains or features shall be submitted in writing to the Owner pursuant to the Contract Documents.

3.8 ALLOWANCES

Delete Sections 3.8.1, 3.8.2, and 3.8.3 in their entirety and add the following new Section 3.8.1:

- 3.8.1 Allowances shall not be made on any of the Work.

3.9 SUPERINTENDENT

- 3.9.1 Add the following to the end of the paragraph:
Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

- 3.10.1 Add the following: For projects with a contract sum greater than \$1,000,000.00, the Contractor shall include with the schedule, for the Owner's and Architect's information, a network analysis to identify those tasks which are on the critical path, i.e., where any delay in the completion of these tasks will lengthen the project timescale, unless action is taken. A revised schedule shall be submitted with each Application and Certificate for Payment. No payment shall be made until this schedule is received.

- 3.10.3 In the first sentence, delete the word "general".

After the first sentence, add the following:

If the Work is not on schedule, as determined by the Architect, and the Contractor fails to take action to bring the Work on schedule, then the Contractor shall be deemed in default under this Contract and the progress of the Work shall be deemed unsatisfactory. Such default may be considered grounds for termination by the Owner for cause in accordance with Section 14.2.

Add the following Sections:

- 3.10.4 Add the following: Submittal by the contractor of a schedule or other documentation showing a completion date for his Work prior to the completion date stated in the contract shall not impose any obligation or responsibility on the Owner or Architect for the earlier completion date.

- 3.10.5 In the event the Owner employs a commissioning consultant, the Contractor shall cooperate fully in the commissioning process and shall require all subcontractors and others under his control to cooperate. The purpose of such services shall be to ensure that all systems perform correctly and interactively according to the provisions of the Contract Documents.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following: This requirement is of the essence of the contract. The Architect shall determine the value of these documents and this amount shall not be approved for payment to the Contractor until all of the listed documents are delivered to the Architect in good order, completely marked with field changes and otherwise complete in all aspects.

ARTICLE 4

ARCHITECT

4.2 ADMINISTRATION OF THE CONTRACT

- 4.2.1 In the first sentence, delete the phrase: “the date the Architect issues the final Certificate for Payment” and replace with the phrase “final payment is due, and with the Owner’s concurrence, from time to time during the one year period for correction of Work described in Section 12.2.”

- 4.2.2 In the first sentence, after the phrase: “become generally familiar with”; insert the following: “and to keep the Owner informed about”.

In the first sentence, after the phrase “portion of the Work completed”, insert the following: “to endeavor to guard the Owner against defects and deficiencies in the Work,”

- 4.2.4 In the first sentence, delete all after “The Owner and Contractor”, and add the following “may communicate directly with each other, when deemed necessary by the Owner, and the Owner will notify the Architect of any decision.”

- 4.2.10 Add the following sentence to the end of Section 4.2.10: There shall be no restriction on the Owner having a Representative.

- 4.2.11 Add the following sentence to the end of Section 4.2.11:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

4.2.14 Insert the following sentence between the second and third sentences of Section 4.2.14:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

ARTICLE 5

SUBCONTRACTORS

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

Delete Section 5.2.1, and substitute the following:

5.2.1 Unless otherwise required by the Contract Documents, the Contractor shall furnish at the Pre-Construction Conference, to the Owner and the Architect, in writing, the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. No Contractor payments shall be made until this information is received.

Delete Section 5.2.2, and substitute the following:

5.2.2 The Contractor shall be solely responsible for selection and performance of all subcontractors. The Contractor shall not be entitled to claims for additional time and/or an increase in the contract sum due to a problem with performance or nonperformance of a subcontractor.

Delete Sections 5.2.3 and 5.2.4 and substitute the following:

5.2.3 The Contractor shall notify the Architect and the Owner when a subcontractor is to be changed and substituted with another subcontractor.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Delete Sections 5.4, 5.4.1, 5.4.2 and 5.4.3

ARTICLE 7

CHANGES IN THE WORK

7.1 GENERAL

Add the following Sections:

7.1.4 As part of the pre-construction conference submittals, the Contractor shall submit the following prior to the Contractor's initial request for payment:

- 7.1.4.1 Fixed job site overhead cost itemized with documentation to support daily rates.
- 7.1.4.2 Bond Premium Rate with supporting information from the General Contractor's carrier.
- 7.1.4.3 Labor Burden by trade for both Subcontractors and General Contractor. The Labor Burden shall be supported by the Worker's Compensation and Employer's Liability Insurance Policy Information Page. Provide for all trades.
- 7.1.4.4 Internal Rate Charges for all significant company owned equipment.
- 7.1.5 If the General Contractor fails to submit the aforementioned documentation as part of the pre-construction submittals, then pay applications shall not be processed until such time as the Owner receives this information.

7.2 CHANGE ORDERS

Delete Section 7.2.1, and substitute the following Sections:

- 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, the Architect, and the Contractor issued after execution of the Contract, authorizing a change in the Work and/or an adjustment in the Contract Sum and/or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any reservation of rights, stipulation, or other modification made on the change order by the contractor shall have no effect.
 - 7.2.2 "Cost of the Work" for the purpose of Change Orders shall be the eligible costs required to be incurred in performance of the Work and paid by the Contractor and Subcontractors which eligible costs shall be limited to:
 - 7.2.2.1 Actual wages paid directly to labor personnel, with a labor burden markup exclusively limited to applicable payroll taxes, worker's compensation insurance, unemployment compensation, and social security taxes for those labor personnel performing the Work. Wages shall be the basic hourly labor rate paid an employee exclusive of fringe benefits or other employee costs. The labor burden percentage for the "Cost of the Work" is limited to categories listed herein. Employer-provided health insurance, fringe benefits, employee training (whether a requirement of employment or not), vacation pay, etc., are examples of ineligible labor burden costs which **shall not** be included, as these costs are already compensated by the Overhead and Profit markup.
- Supervision shall not be included as a line item in the "Cost of the Work", except when the change results in a documented delay in the critical path, as described in Section 7.2.7.

- 7.2.2.2 Cost of all materials and supplies necessary and required to perform the Work, identifying each item and its individual cost, including taxes. Incidental consumables are not eligible costs and shall not be included.
- 7.2.2.3 Cost of each necessary piece of machinery and equipment required to perform the Work, identifying each item and its individual cost, including taxes. Incidental small tools of a specific trade (i.e., shovels, saws, hammers, air compressors, etc.) and general use vehicles, such as pickup trucks even for moving items around the site, fuel for these general use vehicles, travel, lodging, and/or meals are not eligible and shall not be included.
- 7.2.2.4 Eligible Insurance costs shall be limited to documented increases in “Builder’s Risk” insurance premium / costs only. Commercial General Liability, Automobile Liability, and all other required insurances, where referenced in the Contract shall be considered part of normal overhead. These costs are already compensated by the Overhead and Profit markup.
- 7.2.2.5 Cost for the General Contractor Performance and Payment Bond premium, where the documented cost of the premiums have been increased due to the Change Order.
- 7.2.3 Overhead and Profit - The Contractor and Subcontractor shall be due home office fixed overhead and profits on the Cost of the Work, but shall not exceed a total of 16% of the direct cost of any portion of Work.
- The credit to the Owner resulting from a change in the Work shall be the sum of those items above, including overhead and profit. Where a change results in both credits to the Owner and extras to the Contractor for related items, overhead and profit shall be computed for credits to the Owner and extras to the Contractor. The Owner shall receive full credit for the computed overhead and profit on credit change order items.
- 7.2.4 The cost to the Owner resulting from a change in the Work shall be the sum of: Cost of the Work (as defined at Section 7.2.2) and Overhead and Profit (as defined at Section 7.2.3), and shall be computed as follows:
- 7.2.4.1 When all of the Work is General Contractor Work; 8% markup on the Cost of the Work.
- 7.2.4.2 When the Work is all Subcontract Work; 8% markup on the Cost of the Work for Subcontractor’s Overhead and Profit, plus 8% markup on the Cost of the Work, not including the Subcontractor’s Overhead and Profit markup, for General Contractor’s Overhead and Profit.
- 7.2.4.3 When the Work is a combination of General Contractor Work and Subcontract Work; that portion of the direct cost that is General Contract Work shall be computed per Section 7.2.4.1 and that portion of the direct cost that is Subcontract Work shall be computed per Section 7.2.4.2.

Premiums for the General Contractor's bond may be included, but after the markup is added to the Cost of the Work.

Premiums for the Subcontractor's Bond shall not be included.

7.2.4.4 Subcontract cost shall consist of the items in Section 7.2.2 above plus Overhead and Profit as defined in Section 7.2.3.

7.2.5 Before a Change Order is prepared, the Contractor shall prepare and deliver to the Architect the following information concerning the Cost of the Work, not subject to waiver, within a reasonable time after being notified to prepare said Change Order:

A detailed, itemized list of labor, material and equipment costs for the General Contractor's Work including quantities and unit costs for each item of labor, material and equipment.

An itemized list of labor, material and equipment costs for each Subcontractor's and/or Sub-Subcontractor's Work including quantities and unit costs for each item of labor, material and equipment.

7.2.6 After a Change Order has been approved, no future requests for extensions of time or additional cost shall be considered for that Change Order.

7.2.7 Extended fixed job-site costs are indirect costs that are necessary to support the work in the field. Examples of fixed job-site costs are field office rental, salaries of field office staff, field office utilities, and telephone.

Extended fixed job-site costs or equitable adjustment may be included in a Change Order due to a delay in the critical path, with the exception of weather related delays. In the event of a delay in the critical path, the Contractor shall submit all changes or adjustments to the Contract Time **within twenty-one (21) days** of the event giving rise to the delay. The Contractor shall submit documentation and justification for the adjustment by performing a critical path analysis of its most recent schedule in use prior to the change, which shows an extension in critical path activities.

The Contractor shall notify the Architect in writing that the Contractor is making a claim for extended fixed job-site overhead as required by Section 15.1.2. The Contractor shall provide proof that the Contractor is unable to mitigate financial damages through Alternate Work within this Contract or replacement work. "Replacement Work" is that work which the Contractor is obligated to perform under any construction contract separate from this Contract. Reasonable proof shall be required by the Architect that the delays affected the Completion Date.

7.2.8 "Cost of the Work" whether General Contractor cost or Subcontractor cost shall not apply to the following:

7.2.8.1 Salaries or other compensation of the Contractor's personnel at the Contractor's principal office and branch offices.

7.2.8.2 Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work.

7.2.8.3 Overhead and general expenses of any kind or the cost of any item not specifically and expressly included above in Cost of the Work.

7.2.8.4 Cost of supervision refer to section 7.2.2.1, with exception as provided in Section 7.2.7.

7.2.9 When applicable as provided by the Contract, the cost to Owner for Change Orders shall be determined by quantities and unit prices. The quantity of any item shall be as submitted by the Contractor and approved by the Architect. Unit prices shall cover cost of Material, Labor, Equipment, Overhead and Profit.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.3 In the first sentence after "following methods" insert: ", but not to exceed a specified amount".

7.3.4 From .1 of the list, delete all after "Costs of labor, including" and substitute the following "social security, old age and employment insurance, applicable payroll taxes, and workers' compensation insurance;"

Delete the following from .4 of the list: "permit fees,"

Delete Section 7.3.9 and substitute the following:

7.3.9 Pending final determination of the total costs of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs.

ARTICLE 8

TIME

8.1 DEFINITIONS

Add the following:

8.1.5 The Contract Time shall not be changed by the submission of a schedule that shows an early completion date unless specifically authorized by change order.

8.2 PROGRESS AND COMPLETION

Add to Section 8.2.1 the following:

Completion of the Work must be within the Time for Completion stated in the Agreement, subject to such extensions as may be granted under Section 8.3. The Contractor agrees to commence Work not later than fourteen (14) days after the transmittal date of Written Notice to Proceed from the Owner and to substantially complete the project within the time stated in the Contract. The Owner will suffer financial loss if the project is not substantially complete in the time set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and shall pay to the Owner the sum stated in the Contract Documents as fixed, agreed and liquidated damages for each consecutive calendar day (Saturdays, Sundays and holidays included) of delay until the Work is substantially complete. The Owner shall be entitled to the sum stated in the Contract Documents. Such Liquidated Damages shall be withheld by the Owner from the amounts due the Contractor for progress payments.

Delete Section 8.2.2.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 In the first sentence after the words "Owner pending" delete the words "mediation and binding dispute resolution" and add the word "litigation", and delete the last word "determine" and add the following: "recommend, subject to Owner's approval of Change Order. If the claim is not made within the limits of Article 15, all rights for future claims for that month are waived."

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

Delete Section 9.1.2.

Delete Section 9.2 and substitute the following:

9.2 SCHEDULE OF VALUES

At the Pre-Construction Conference, the Contractor shall submit to the Owner and the Architect a Schedule of Values prepared as follows:

- 9.2.1 The attached Schedule of Values Format shall be used. If applicable, the cost of Work for each section listed under each division, shall be given. The cost for each section shall include Labor, Materials, Overhead and Profit.
- 9.2.2 The Total of all items shall equal the Total Contract Sum. This schedule, when approved by the Architect, shall be used as a basis for the Contractor's Applications for Payment and it may be used for determining the cost of the Work in deductive change orders, when a specific item of Work listed on the Schedule of Values is to be removed. Once the Schedule of Values is submitted at the Pre-Construction Conference, the schedule shall not be modified without approval from the Owner and Architect.

9.3 APPLICATIONS FOR PAYMENT

Delete Sections 9.3.1, 9.3.1.1, and 9.3.1.2 and substitute the following:

9.3.1 Monthly, the Contractor shall submit to the Architect a Facility Planning and Control – Application and Certification for Payment form, supported by any additional data substantiating the Contractor’s right to payment as the Owner or the Architect may require. Application for Payment shall be submitted on or about the first of each month for the value of labor and materials incorporated into the Work and of materials, suitably stored, at the site as of the twenty-fifth day of the preceding month, less normal retainage as follows, per La R.S. 38:2248:

9.3.1.1 Projects with Contract price up to \$500,000.00 – 10% of the Contract price.

9.3.1.2 Projects with Contract price of \$500,000.00, or more – 5% of the Contract price.

9.3.1.3 No payment shall be made until the revised schedule required by Section 3.10.1 is received.

9.3.1.4 The normal retainage shall not be due the Contractor until after substantial completion and expiration of the forty-five day lien period and submission to the Architect of a clear lien certificate, consent of surety, and invoice for retainage.

Delete Section 9.3.2 and substitute the following:

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. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner’s title to such materials and equipment or otherwise protect the Owner’s interest, including applicable insurance.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Section 9.5.1.7: Delete the word “repeated”.

Delete Section 9.5.4.

9.6 PROGRESS PAYMENTS

Delete Section 9.6.1 and substitute the following:

9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment within twenty days except for projects funded fully or in part by a Federal reimbursement program. For such projects the Owner will make payment in a timely manner consistent with reimbursement.

9.6.2 Delete the phrase: “no later than seven days” from the first sentence.

After the end of the second sentence, add the following:

La R.S. 9:2784 (A) and (C) require a Contractor or Subcontractor to make payment due to each Subcontractor and supplier within fourteen (14) consecutive days of the receipt of payment from the Owner. If not paid, a penalty in the amount of ½ of 1% per day is due, up to a maximum of 15% from the expiration date until paid. The contractor or subcontractor, whichever is applicable, is solely responsible for payment of a penalty.

- 9.6.4 Delete the first two sentences of Section 9.6.4 and add the following to the end of the Section:

Pursuant to La. R.S. 38:2242 and La. R.S. 38:2242.2, when the Owner receives any claim of nonpayment arising out of the Contract, the Owner shall deduct 125% of such claim from the Contract Sum. The Contractor, or any interested party, may deposit security, in accordance with La. R.S. 38:2242.2, guaranteeing payment of the claim with the recorder of mortgages of the parish where the Work has been done. When the Owner receives original proof of such guarantee from the recorder of mortgages, the claim deduction will be added back to the Contract Sum.

Delete Section **9.7 FAILURE OF PAYMENT.**

Delete Section 9.8 and substitute the following:

9.8 SUBSTANTIAL COMPLETION

- 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Architect shall determine if the project is substantially complete in accordance with this Section.
- 9.8.2 When the Contractor considers that the Work is Substantially Complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.
- 9.8.3 Upon receipt of the Contractor's list, the Architect shall make an inspection to determine whether the Work is substantially complete. A prerequisite to the Work being considered as substantially complete is the Owner's receipt of the executed Roofing Contractor's and Roofing Manufacturer's guarantees, where roofing Work is part of the Contract. Prior to inspection by the Architect, the Contractor shall notify the Architect that the project is ready for inspection by the State Fire Marshal's office. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, the Contractor shall, before the Work can be considered as Substantially Complete, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

- 9.8.4 When the Architect determines that the project is Substantially Complete, he shall prepare a punch list of exceptions and the dollar value related thereto. The monetary value assigned to this list will be the sum of the cost estimate for each particular item of Work the Architect develops based on the mobilization, labor, material and equipment costs of correcting the item and shall be retained from the monies owed the contractor, above and beyond the standard lien retainage. The cost of these items shall be prepared in the same format as the schedule of values. At the end of the forty-five day lien period payment shall be approved for all punch list items completed up to that time. After that payment, none of the remaining funds shall be due the contractor until all punch list items are completed and are accepted by the Architect. If the dollar value of the punch list exceeds the amount of funds, less the retainage amount, in the remaining balance of the Contract, then the Project shall not be considered as substantially complete. If funds remaining are less than that required to complete the Work, the Contractor shall pay the difference.
- 9.8.5 When the preparation of the punch list is complete the Architect shall prepare a Recommendation of Acceptance incorporating the punch list and submit it to the Owner. Upon approval of the Recommendation of Acceptance, the Owner may issue a Notice of Acceptance of Building Contract which shall establish the Date of Substantial Completion. The Contractor shall record the Notice of Acceptance with the Clerk of Court in the Parish in which the Work has been performed. If the Notice of Acceptance has not been recorded seven (7) days after issuance, the Owner may record the Acceptance at the Contractor's expense. All additive change orders must be processed before issuance of the Recommendation of Acceptance. The Owner shall not be responsible for payment for any Work associated with change orders that is not incorporated into the contract at the time of the Recommendation of Acceptance.
- 9.8.6 Warranties required by the Contract Documents shall commence on the date of Acceptance of the Work unless otherwise agreed to in writing by the Owner and Contractor. Unless otherwise agreed to in writing by the Owner and Contractor, security, maintenance, heat, utilities, damage to the Work not covered by the punch list and insurance shall become the Owner's responsibility on the Date of Substantial Completion.
- 9.8.7 If all punch list items have not been completed by the end of the forty-five (45) day lien period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within forty-five (45) days after notification, the Surety has not completed the punch list, through no fault of the Architect or Owner, the Owner may, at his option, contract to have the balance of the Work completed and pay for such Work with the unpaid funds remaining in the Contract sum. Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts. If the surety fails to complete the punch list within the stipulated time period, the Owner may not accept bonds submitted, in the future, by the surety.

9.9 PARTIAL OCCUPANCY OR USE

Delete Section 9.9.1 and substitute the following:

- 9.9.1 Partial Occupancy is that stage in the progress of the Work when a designated portion of the Work is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the designated portion of the Work for its intended use. The Owner may occupy or use any substantially completed portion of the Work so designated by separate agreement with the Contractor and authorized by public authorities having jurisdiction over the Work. Such occupancy or use may commence provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, 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 the designated portion substantially complete the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld.

9.10 FINAL COMPLETION AND FINAL PAYMENT

Delete Section 9.10.4 and replace with the following:

- 9.10.4 The making of final payment shall not constitute a waiver of Claims by the Owner for the following:
- 9.10.4.1 Claims, security interests, or encumbrances arising out of the Contract and unsettled;
 - 9.10.4.2 failure of the Work to comply with the requirements of the Contract Documents irrespective of when such failure is discovered;
 - 9.10.4.3 terms of special warranties required by the Contract Documents; or
 - 9.10.4.4 audits performed by the Owner, after final payment.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

- 10.2.2 In the first sentence, between the words: “bearing on” and “safety”, add the words: “the health and,”

10.3 HAZARDOUS MATERIALS

- 10.3.1 In the second sentence after (PCB) add: “or lead”.
- 10.3.2 After the first sentence, delete all remaining sentences.

Add at the end: “The Contract time shall be extended appropriately.”

Delete Section 10.4 and substitute the following:

10.4 EMERGENCIES

In an emergency affecting the safety of persons or property, the Contractor shall notify the Owner and Architect immediately of the emergency, simultaneously acting at his discretion to prevent damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency Work shall be determined as provided in Article 15 and Article 7.

ARTICLE 11

INSURANCE AND BONDS

AIA A101 – 2017 Exhibit A is not a part of these documents. Delete all of Sections 11.1, 11.2, 11.3, 11.4, and 11.5, and substitute the following:

**INSURANCE REQUIREMENTS FOR
NEW CONSTRUCTION, ADDITIONS AND RENOVATIONS**

11.1 CONTRACTOR'S LIABILITY INSURANCE

The Contractor shall purchase and maintain without interruption for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, its agents, representatives, employees or subcontractors. The duration of the contract shall be from the inception of the contract until the date of final payment.

11.2 MINIMUM SCOPE AND LIMITS OF INSURANCE

11.2.1 Worker's Compensation

Worker's Compensation insurance shall be in compliance with the Worker's Compensation law of the Contractor's headquarters. Employers Liability is included with a minimum limit of \$1,000,000 per accident/per disease/per employee. If Work is to be performed over water and involves maritime exposure, applicable LHWCA, Jones Act or other maritime law coverage shall be included. A.M. Best's insurance company rating requirement may be waived for Worker's compensation coverage only.

11.2.2 Commercial General Liability

Commercial General Liability insurance, including Personal and Advertising Injury Liability and Products and Completed Operations Liability, shall have a minimum limit per occurrence based on the project value. The Insurance Services Office (ISO) Commercial General Liability occurrence coverage form CG 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. Claims-made form is unacceptable.

The aggregate loss limit must apply to each project. ISO form CG 25 03 (current form approved for use in Louisiana), or equivalent, shall also be submitted. The State project number, including part number, and project name shall be included on this endorsement.

COMBINED SINGLE LIMIT (CSL) PER OCCURRENCE

<u>Type of Construction</u>	<u>Projects up to \$1,000,000</u>	<u>Projects over \$1,000,000 up to \$10,000,000</u>	<u>Projects over \$10,000,000</u>
New Buildings:			
Each Occurrence Minimum Limit	\$1,000,000	\$2,000,000	\$4,000,000
Per Project Aggregate	\$2,000,000	\$4,000,000	\$8,000,000
Renovations: The building(s) value for the Project is \$21,789,443.			
Each Occurrence Minimum Limit	\$1,000,000**	\$2,000,000**	\$4,000,000**
Per Project Aggregate	2 times per occur limit**	2 times per occur limit**	2 times per occur limit**

**While the minimum Combined Single Limit of \$1,000,000 is required for any renovation, the limit is calculated by taking 10% of the building value and rounding it to the nearest \$1,000,000 to get the insurance limit. Example: Renovation on a \$33,000,000 building would have a calculated \$3,000,000 combined single limit of coverage ($33,000,000 \times .10 = 3,300,000$ and then rounding down to \$3,000,000). If the calculated limit is less than the minimum limit listed in the above chart, then the amount needed is the minimum listed in the chart. Maximum per occurrence limit required is \$10,000,000 regardless of building value. The per project aggregate limit is then calculated as twice the per occurrence limit.

11.2.3 Automobile Liability

Automobile Liability Insurance shall have a minimum combined single limit per occurrence of \$1,000,000. ISO form number CA 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. This insurance shall include third-party bodily injury and property damage liability for owned, hired and non-owned automobiles.

11.2.4 Excess Umbrella

Excess Umbrella Insurance may be used to meet the minimum requirements for General Liability and Automobile Liability only.

11.2.5 Builder's Risk

- 11.2.5.1 Builder's Risk Insurance shall be in an amount equal to the amount of the construction contract including any amendments and shall be upon the entire Work included in the contract. The policy shall provide coverage equivalent to the ISO form number CP 10 20, Broad Form Causes of Loss (extended, if necessary, to include the perils of wind, earthquake, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure). The policy must include architects' and engineers' fees necessary to provide plans, specifications and supervision of Work for the repair and/or replacement of property damage caused by a covered peril, not to exceed 10% of the cost of the repair and/or replacement.
- 11.2.5.2 Flood coverage shall be provided by the Contractor on the first floor and below for all projects, except as otherwise noted. The builder's risk insurance policy, sub-limit for flood coverage shall not be less than ten percent (10%) of the total contract cost per occurrence. If flood is purchased as a separate policy, the limit shall be ten percent (10%) of the total contract cost per occurrence (with a max of \$500,000 if NFIP). Coverage for roofing projects shall **not** require flood coverage.
- 11.2.5.3 A Specialty Contractor may provide an installation floater in lieu of a Builder's Risk policy, with the similar coverage as the Builder's Risk policy, upon the system to be installed in an amount equal to the amount of the contract including any amendments. Flood coverage is not required.
- 11.2.5.4 The policy must include coverage for the Owner, Contractor and any subcontractors as their interests may appear.

11.2.6 Pollution Liability (*required when asbestos or other hazardous material abatement is included in the contract*)

Pollution Liability insurance, including gradual release as well as sudden and accidental, shall have a minimum limit of not less than \$1,000,000 per claim. A claims-made form will be acceptable. A policy period inception date of no later than the first day of anticipated Work under this contract and an expiration date of no earlier than 30 days after anticipated completion of all Work under the contract shall be provided. There shall be an extended reporting period of at least 24 months, with full reinstatement of limits, from the expiration date of the policy if the policy is not renewed. The policy shall not be cancelled for any reason, except non-payment of premium.

11.2.7 Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and accepted by the Owner. The Contractor shall be responsible for all deductibles and self-insured retentions.

11.3 OTHER INSURANCE PROVISIONS

11.3.1 The policies are to contain, or be endorsed to contain, the following provisions:

11.3.1.1 Worker's Compensation and Employers Liability Coverage

11.3.1.1.1 To the fullest allowed by law, the insurer shall agree to waive all rights of subrogation against the Owner, its officers, agents, employees and volunteers for losses arising from Work performed by the Contractor for the Owner.

11.3.1.2 Commercial General Liability Coverage

11.3.1.2.1 The Owner, its officers, agents, employees and volunteers are to be added as additional insureds as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. ISO Form CG 20 10 (for ongoing work) AND CG 20 37 (for completed work) (current forms approved for use in Louisiana), or equivalent, are to be used.

11.3.1.2.2 The Contractor's insurance shall be primary as respects the Owner, its officers, agents, employees and volunteers for any and all losses that occur under the contract. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, officials, employees or volunteers. Any insurance or self-insurance maintained by the Owner shall be excess and non-contributory of the Contractor's insurance.

11.3.1.3 Builder's Risk

The policy must include an endorsement providing the following:

In the event of a disagreement regarding a loss covered by this policy, which may also be covered by a State of Louisiana self-insurance or commercial property policy through the Office of Risk Management (ORM), Contractor and its insurer agree to follow the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, the Contractor's insurer and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers shall select a competent and impartial umpire. The appraisers shall then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each

insurance company agrees that the decision of the appraisers and the umpire if involved shall be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

11.3.1.4 All Coverages

11.3.1.4.1 All policies must be endorsed to require 30 days written notice of cancellation to the Agency. Ten-day written notice of cancellation is acceptable for non-payment of premium. Notifications shall comply with the standard cancellation provisions in the Contractor's policy. In addition, Contractor is required to notify Agency of policy cancellations or reductions in limits.

11.3.1.4.2 Neither the acceptance of the completed Work nor the payment thereof shall release the Contractor from the obligations of the insurance requirements or indemnification agreement.

11.3.1.4.3 The insurance companies issuing the policies shall have no recourse against the Owner for payment of premiums or for assessments under any form of the policies.

11.3.1.4.4 Any failure of the Contractor to comply with reporting provisions of the policy shall not affect coverage provided to the Owner, its officers, agents, employees and volunteers.

11.3.2 Acceptability of Insurers

All required insurance shall be provided by a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located. Insurance shall be placed with insurers with an A.M. Best's rating of **A-: VI or higher**. This rating requirement may be waived for Worker's compensation coverage only.

If at any time an insurer issuing any such policy does not meet the minimum A.M. Best rating, the Contractor shall obtain a policy with an insurer that meets the A.M. Best rating and shall submit another certificate of insurance within 30 days.

11.3.3 Verification of Coverage

Contractor shall furnish the Owner with Certificates of Insurance reflecting proof of required coverage. The Certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates are to be received and approved by the Owner before Work commences and upon any contract renewal or insurance policy renewal thereafter. The Certificate Holder must be listed as follows:

State of Louisiana
Name of Owner

Owner Address

City, State, Zip

Attn: Project # _____

The Owner reserves the right to request complete certified copies of all required insurance policies at any time.

Upon failure of the Contractor to furnish, deliver and maintain required insurance, this contract, at the election of the Agency, may be suspended, discontinued, or terminated. Failure of the Contractor to purchase and/or maintain any required insurance shall not relieve the Contractor from any liability or indemnification under the contract.

If the Contractor does not meet the insurance requirements at policy renewal, at the option of the Owner, payment to the Contractor may be withheld until the requirements have been met, OR the Owner may pay the renewal premium and withhold such payment from any monies due the Contractor, OR the contract may be suspended or terminated for cause.

11.3.4 Subcontractors

Contractor shall include all subcontractors as insureds under its policies OR shall be responsible for verifying and maintaining the certificates provided by each subcontractor. Subcontractors shall be subject to all of the requirements stated herein. The Owner reserves the right to request copies of subcontractor's certificates at any time.

If Contractor does not verify subcontractors' insurance as described above, Owner has the right to withhold payments to the Contractor until the requirements have been met.

11.3.5 Worker's Compensation Indemnity

In the event Contractor is not required to provide or elects not to provide Worker's compensation coverage, the parties hereby agree the Contractor, its Owners, agents and employees shall have no cause of action against, and shall not assert a claim against, the State of Louisiana, its departments, agencies, agents and employees as an employer, whether pursuant to the Louisiana Worker's Compensation Act or otherwise, under any circumstance. The parties also hereby agree that the State of Louisiana, its departments, agencies, agents and employees shall in no circumstance be, or considered as, the employer or statutory employer of Contractor, its Owners, agents and employees. The parties further agree that Contractor is a wholly independent Contractor and is exclusively responsible for its employees, Owners, and agents. Contractor hereby agrees to protect, defend, indemnify and hold the State of Louisiana, its departments, agencies, agents and employees harmless from any such assertion or claim that may arise from the performance of this contract.

11.3.6 Indemnification/Hold Harmless Agreement

Contractor agrees to protect, defend, indemnify, save, and hold harmless, the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants, employees and volunteers, from and against any and all claims,

damages, expenses and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur, or in any way grow out of, any act or omission of Contractor, its agents, servants and employees, or any and all costs, expenses and/or attorney fees incurred by Contractor as a result of any claims, demands, suits or causes of action, except those claims, demands, suits or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its officers, agents, servants, employees and volunteers.

Contractor agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands, suits or causes of action at its sole expense and agrees to bear all other costs and expenses related thereto, even if the claims, demands, suits, or causes of action are groundless, false or fraudulent. The State of Louisiana may, but is not required to, consult with the Contractor in the defense of claims, but this shall not affect the Contractor's responsibility for the handling and expenses of all claims.

11.4 PERFORMANCE 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.

11.4.3 Recordation of Contract and Bond [La R.S. 38:2241 thru 38:2241.1]

The Contractor shall record within thirty (30) days the Contract Between Owner and Contractor and Performance and Payment Bond with the Clerk of Court in the Parish in which the Work is to be performed.

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.2 CORRECTION OF WORK

12.2.1 Before Substantial Completion

At the end of the paragraph, add the following sentences:

“If the Contractor fails to correct Work identified as defective within a thirty (30) day period, through no fault of the Designer, the Owner may hold the Contractor in default. If the Owner finds the Contractor in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the nonconforming Work, through no fault of the Architect or Owner, the Owner may contract to have nonconforming Work corrected and hold the Surety and Contractor responsible for the cost, including architectural fees and other indirect costs. If the Surety fails to correct the Work within the stipulated time period and fails to meet its obligation to pay the costs,

the Owner may elect not to accept bonds submitted in the future by the Surety. Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts.

12.2.2 After Substantial Completion

12.2.2.1 At the end of the paragraph delete the last sentence and add the following sentences:

“If the Contractor fails to correct nonconforming Work, or Work covered by warranties, within a thirty (30) day period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the non-conforming or warranty Work, through no fault of the Architect or Owner, the Owner may contract to have the nonconforming or warranty Work corrected and hold the Surety responsible for the cost including architects fees and other indirect costs. Corrections by the Owner shall be in accordance with Section 2.4. If the Surety fails to correct the nonconforming or warranty Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may not accept bonds submitted, in the future, by the Surety.”

ARTICLE 13

MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Delete all after the word “located”.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 In the second sentence, delete “Except as ... 13.2.2”

Delete Section 13.2.2.

13.3 RIGHTS AND REMEDIES

Add the following Section 13.3.3:

13.3.3 The Nineteenth Judicial Court in and for the Parish of East Baton Rouge, State of Louisiana shall have sole jurisdiction and venue in any action brought under this contract.

13.4 TESTS AND INSPECTIONS

In Section 13.4.1, delete the second sentence and substitute the following:

The Contractor shall make arrangements for such tests, inspections and approvals with the Testing Laboratory provided by the Owner, and the Owner shall bear all related costs of tests, inspections and approvals.

Delete the last two sentences of Section 13.4.1.

13.5 INTEREST

Delete Section 13.5.

ARTICLE 14

TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

Delete Section 14.1.1.4.

In Section 14.1.3, after the word “profit,” delete the words “on Work not executed” and substitute the following: “for Work completed prior to stoppage”.

14.2 TERMINATION BY THE OWNER FOR CAUSE

Add the following Section:

14.2.1.5 failure to complete the punch list within the lien period as provided in 9.8.7.

14.2.3 Add the following sentence:

“Termination by the Owner shall not suspend assessment of liquidated damages against the Surety.”

Add the following Section:

14.2.5 If an agreed sum of liquidated damages has been established, termination by the Owner under this Article shall not relieve the Contractor and/or Surety of his obligations under the liquidated damages provisions and the Contractor and/or Surety shall be liable to the Owner for per diem liquidated damages.

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

In Section 14.4.3, delete all after “incurred by reason of the termination,” and add “along with reasonable profit on the Work not executed.”

ARTICLE 15

CLAIMS AND DISPUTES

15.1 CLAIMS

Delete Section 15.1.2, **Time Limit on Claims**, (See La R.S. 38:2189, and 38:2189.1).

15.1.3.1 Add the following to the end of the paragraph:

“A Reservation of Rights and similar stipulations shall not be recognized under this contract as having any effect. A party must make a claim as defined herein within the time limits provided.”

15.1.4.2 In the first sentence of the Section, delete “Initial Decision Maker’s” and replace with “Architect’s”. In the second sentence of the Section, delete “the decision of the Initial Decision Maker” and replace with: “his/her decision”.

Delete Section 15.1.6.2 and substitute the following:

15.1.6.2 If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document that weather conditions had an adverse effect on the scheduled construction. An increase in the contract time due to weather shall not be cause for an increase in the contract sum. At the end of each month, the Contractor shall make one Claim for any adverse weather days occurring within the month. The Claim must be accompanied by sufficient documentation evidencing the adverse days and the impact on construction. Failure to make such Claim within **twenty-one (21) days** from the last day of the month shall prohibit any future claims for adverse days for that month. No additional adverse weather days shall be granted after the original or extended contract completion date, except those adverse weather days associated with a National Weather Service named storm or federally declared weather related disaster directly affecting the project site.

Add the following Section:

15.1.6.3 The following are considered reasonably anticipated days of adverse weather on a monthly basis:

January	<u>11</u> days	July	<u>6</u> days
February	<u>10</u> days	August	<u>5</u> days
March	<u>8</u> days	September	<u>4</u> days
April	<u>7</u> days	October	<u>3</u> days
May	<u>5</u> days	November	<u>5</u> days
June	<u>6</u> days	December	<u>8</u> days

The Contractor shall ask for total adverse weather days. The Contractor’s request shall be considered only for days over the allowable number of days stated above.

Note: Contract is on a calendar day basis.

15.2 INITIAL DECISION

15.2.1 In the second sentence, delete the word “will” and replace with: “shall always”.

In the second sentence, delete the phrase: “, unless otherwise indicated in the Agreement.”

In the third sentence, delete the word “mediation” and replace with: “litigation”.

At the end of the third sentence, add: “arising prior to the date final payment is due”.

Delete the fourth sentence.

15.2.5 In the middle of the first sentence, delete all after the phrase: “rejecting the Claim”.

In the second sentence, delete the phrase: “and the Architect, if the Architect is not serving as the Initial Decision Maker,”.

In the third sentence, delete all after: “binding on the parties” and add the following: “except that the Owner may reject the decision or suggest a compromise or both”.

Delete Section 15.2.6.

Delete Section 15.2.6.1.

15.3 MEDIATION

Delete Section 15.3.

15.4 ARBITRATION

Delete Section 15.4.

FOR INFORMATION ONLY

This document will be prepared by University of New Orleans in the form appropriate for the project.

STATE OF LOUISIANA
PARISH OF «PARISH OF PROJECT»

CONTRACT BETWEEN OWNER AND CONTRACTOR
AND PERFORMANCE AND PAYMENT BOND

This agreement entered into this _____ day of _____, 2025, by «Contractor» hereinafter called the "Contractor", whose business address is «Contractor Address», «Contractor City», «Contractor State» «Contractor Zip», and the State of Louisiana Division of Administration, herein represented by the contracting officer executing this contract, hereinafter called the "Owner".

Witnesseth that the Contractor and the Owner, in consideration of premises and the mutual covenants; consideration and agreement herein contained, agree as follows:

Statement of Work: The contractor shall furnish all labor and materials and perform all of the work required to build, construct and complete in a thorough and workmanlike manner:

«Project_Reference_1»
«Project_Reference_2»
«Project_Reference_3»
«Project_City», Louisiana
Project No.: «ProjectNo», «Part_No»«WBS»;
 «Supplement_Project_No», Part «Supplement_Part_No»
 («Supplement_WBS»)(Supplement)
State ID No.: «StateID» Site Code: «SiteCode»

in strict accordance with Contract Documents prepared by:

«Designer»
«Designer_Address»
«Designer_City», «Designer_State» «Designer_Zip»

It is recognized by the parties herein that said Contract Documents including by way of example and not of limitation, the Drawings and Specifications dated «Drawings and Specs Date», Addenda number(s) «Addenda No», the Instruction to Bidders, Bid Form, General Conditions, Supplementary Conditions, any Addenda thereto, impose duties and obligations upon the parties herein, and said parties thereby agree that they shall be bound by said duties and obligations. For these purposes, all of the provisions contained in the aforementioned Construction Documents are incorporated herein by reference with the same force and effect as though said Construction Documents were herein set out in full.

Time for Completion: The work shall be commenced on a date to be specified in a written order of the Owner and shall be completed within «Time Completion Days» («Time Completion Days») consecutive calendar days from and after the said date.

Liquidated Damages: Contractor shall be assessed Liquidated Damages in the amount of «Liquidated Damages Cost Per Day» per day for each consecutive calendar day which work is not complete beginning with the first day beyond the completion time.

Compensation to be paid to the Contractor: The Owner will pay and the Contractor will accept in full consideration for the performance of the contract the sum of «Contract Amount Words» and No/100 Dollars («Contract Amount Numeral») which sum represents the «Base_Bid_Only_or_Plus_Alternates»

Taxes: Contractor hereby agrees that the responsibility for payment of taxes from the funds thus received under this Contract and/or legislative appropriation shall be contractor's obligation and identified under Federal tax identification number _____.

Performance and Payment Bond: To these presents personally came and intervened _____, herein acting for _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Louisiana, as surety, who declared that having taken cognizance of this contract and of the Construction Documents mentioned herein, he hereby in his capacity as its Attorney in Fact obligates his said company, as Surety for the said Contractor, unto the said Owner, up to the sum of «Contract Amount Words» and No/100 Dollars («Contract Amount Numeral»). By issuance of this bond, the surety acknowledges they are in compliance with R.S. 38:2219.

The condition of this performance and payment bond shall be that should the Contractor herein not perform the contract in accordance with the terms and conditions hereof, or should said Contractor not fully indemnify and save harmless the Owner, from all cost and damages which he may suffer by said Contractor's non-performance or should said Contractor not pay all persons who have and fulfill obligations to perform labor and/or furnish materials in the prosecution of the work provided for herein, including by way of example workmen, laborers, mechanics, and furnishers of materials, machinery, equipment and fixtures, then said Surety agrees and is bound to so perform the contract and make said payment(s).

Provided, that any alterations which may be made in the terms of the contract or in the work to be done under it, or the giving by the Owner of any extensions of time for the performance of the contract, or any other forbearance on the part of either the Owner or the Contractor to the other shall not in any way release the Contractor or the Surety from their liability hereunder, notice to the Surety of any such alterations, extensions or other forbearance being hereby waived.

Contractor acknowledges and agrees to comply with the provisions of La. R.S. 38:2212.10 and federal law pertaining to E-Verify in the performance of services under this Contract.

It is hereby agreed that the Legislative Auditor of the State of Louisiana and/or the Office of the Governor, Division of Administration auditors shall have the option of auditing all accounts of contractor which relate to this contract.

The continuation of this contract is contingent upon the appropriation of funds to fulfill the requirements of the contract by the legislature. If the legislature fails to appropriate sufficient monies to provide for the continuation of the contract, or if such appropriation is reduced by the veto of the Governor or by any means provided in the appropriations act to prevent the total appropriation for the year from exceeding revenues for that year, or for any other lawful purpose, and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated.

The contractor agrees to abide by the requirements of the following as applicable: Title VI of the Civil Rights Act of 1964 and Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972, Federal Executive Order 11246 as amended, the Rehabilitation Act of 1973, as amended, the Vietnam Era Veteran's Readjustment Assistance Act of 1974, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, the Fair Housing Act of 1968 as amended, and contractor agrees to abide by the requirements of the Americans with Disabilities Act of 1990.

Contractor agrees not to discriminate in its employment practices, and will render services under this contract without regard to race, color, religion, sex, sexual orientation, national origin, veteran status, political affiliation, disability, or age in any matter relating to employment. Any act of discrimination committed by Contractor, or failure to comply with these statutory obligations when applicable shall be grounds for termination of this contract.

In accordance with R.S. 39:1602.1, effective May 22, 2018, for any contract for \$100,000 or more and for any contractor with five or more employees, Contractor, or any Subcontractor, shall certify it is not engaging in a boycott of Israel, and shall, for the duration of this contract, refrain from a boycott of Israel. The State reserves the right to terminate this contract if the Contractor, or any Subcontractor, engages in a boycott of Israel during the term of the contract.

In accordance with La. R.S. 39:1602.2, the following applies to any competitive sealed bids, competitive sealed proposals, or contract(s) with a value of \$100,000 or more involving a for-profit company with at least fifty full-time employees:

Unless otherwise exempted by law, by submitting a response to this solicitation or entering into this contract, the Bidder, Proposer or Contractor certifies the following:

1. The company does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association;
2. The company will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

The State reserves the right to reject the response of the Bidder, Proposer or Contractor if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response or if the certification is no longer true.

Contractor has a continuing obligation to disclose any suspensions or debarment by any government entity, including but not limited to General Services Administration (GSA). Failure to disclose may constitute grounds for suspension and/or termination of the Contract and debarment from future Contracts.

Contractor, and each tier of Subcontractors, shall certify that it is not on the List of Parties Excluded from Federal Procurement or Nonprocurement Programs promulgated in accordance with E.O.s 12549 and 12689, "Debarment and Suspension," as set forth at 24 CFR part 24.

In Witness whereof, the parties hereto on the day and year first above written have executed this agreement in six (6) counterparts, each of which shall, without proof or accountancy for the other counterparts, be deemed an original thereof.

THUS DONE AND SIGNED at Baton Rouge, Louisiana, on the day, month, and year first written above.

WITNESSES:

UNIVERSITY OF NEW ORLEANS

University of New Orleans Witness #1 Sign Here

BY: _____

PURCHASING

University of New Orleans Witness #2 Sign Here

Contractor Witness #1 Sign Here

BY: _____

«CONTRACTOR»

Contractor Witness #2 Sign Here

SURETY:

Surety Witness #1 Sign Here

BY: _____

ATTORNEY IN FACT

Surety Witness #2 Sign Here

ADDRESS

TELEPHONE NUMBER

PROJECT NO.:«ProjectNo», «Part_No»«WBS»;
«Supplement Project No», Part
«Supplement Part No» («Supplement WBS»)(Supplement)
NAME: «Project Reference 1»
«Project Reference 2»
«Project Reference 3»
LOCATION: «Project City»

NON-COLLUSION AFFIDAVIT

Before me, the undersigned authority, duly commissioned and qualified within and for the State and Parish aforesaid, personally came and appeared _____ representing «Contractor» who, being by me first duly sworn deposed and said that he has read this affidavit and does hereby agree under oath to comply with all provisions herein as follows:

PART I.

Section 2224 of Part II of Chapter 10 of Title 38 of the Louisiana Revised Statutes, as amended.

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant; and

(2) That no part of the Contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the Contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for affiant.

PART II.

Section 2190 of Part I of Chapter 10 of Title 38 of the Louisiana Revised Statutes, as amended.

That affiant, if an architect or engineer, or representative thereof, does not own a substantial financial interest, either directly or indirectly, in any corporation, firm, partnership, or other organization which supplies materials for the construction of a public work when the architect or engineer has performed architectural or engineering services, either directly or indirectly, in connection with the public work for which the materials are being supplied.

For the purposes of this Section, a "substantial financial interest" shall exclude any interest in stock being traded on the American Stock Exchange or the New York Stock Exchange.

That affiant, if subject to the provisions of this section, does hereby agree to be subject to the penalties involved for the violation of this section.

AFFIANT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____, 2025.

NOTARY

STATE OF _____

PARISH OF _____

ATTESTATIONS AFFIDAVIT

Before me, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

LA. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

- (a) Public bribery (R.S. 14:118)
- (b) Corrupt influencing (R.S. 14:120)

- (c) Extortion (R.S. 14:66)
- (d) Money laundering (R.S. 14:230)

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

- (a) Theft (R.S. 14:67)
- (b) Identity Theft (R.S. 14:67.16)
- (c) Theft of a business record (R.S.14:67.20)
- (d) False accounting (R.S. 14:70)
- (e) Issuing worthless checks (R.S. 14:71)

- (f) Bank fraud (R.S. 14:71.1)
- (g) Forgery (R.S. 14:72)
- (h) Contractors; misapplication of payments (R.S. 14:202)
- (i) Malfeasance in office (R.S. 14:134)

LA. R.S. 38:2212.10 Verification of Employees

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new hires in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

LA. R.S. 23:1726(B) Certification Regarding Unpaid Workers Compensation Insurance

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for or obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid /proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATORY OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER/AFFIANT**

Sworn to and subscribed before me by Affiant on the ____ day of _____, 20__.

Notary Public

University of New Orleans

15. PRE-CONSTRUCTION CONFERENCE AGENDA

As a minimum, the following items are to be covered in the pre-construction conference. The Designer may, at his discretion, add additional items which he feels are important to this particular project.

1. Contractor shall furnish the following prior to his first payment:

- a. Cost breakdown (Schedule of Values), shall be in standard Construction Specifications Institute format.
- b. List Sub-contractors and major suppliers
- c. Information listed in Paragraph 7.1 of the Supplementary Conditions.
- d. Construction Schedule as defined in 3.10.2 of General Conditions and Supplementary Conditions.

No payments to the contractor shall be made until this information is provided.

2. Roles of Individuals:

- a. **Designer** – shall be solely responsible for the direction of the project. The Designer shall keep minutes of all meetings, including construction progress meetings, and distribute within 7 days. All instructions to contractor shall come from the designer. All decisions and directions shall be in writing. Verbal instructions shall be immediately confirmed in writing. The Designer and his principal consultants shall visit the project regularly according to the requirements of the Louisiana Capital Improvement Projects Procedure Manual for Design and Construction. The Designer shall NOT assume the role of his principal consultants in site visits. Copies of Designer Site Visit Reports are to be sent to University of New Orleans and the User Agency on a weekly basis.
- b. **Owner** - Designer to receive instructions only from University of New Orleans. Program or design changes shall be approved by University of New Orleans prior to any work being performed by the Designer.
- c. **User Agency** - Address all requests for changes through University of New Orleans. Establish ground rules for the contractor and his personnel while working on

their premises. If representatives of University of New Orleans or the using agency find any discrepancies, they believe to be contrary to the Contract Documents, they shall notify the designer. If it is thought that discrepancy needs immediate attention, the individual discovering the discrepancy and the contractor's representative should call the designer for immediate resolution.

- d. **Contractor** - Work shall be according to the Contract Documents, not necessarily standard practice. Emergency action to protect life or property shall be taken immediately by the superintendent on the site. Less urgent action shall be resolved by telephone among the appropriate parties. Fire Marshal approved documents shall be accessible at all times at the project site, in accordance with Fire Marshal requirements. Approved documents from all other applicable regulatory agencies shall also be accessible at all times at the project site.

3. Change Orders:

All requests for a change in time and/or money shall be submitted to the designer, with proper back up data, for his review. The designer shall submit the Change Order to University of New Orleans with his recommendation of action required. The Change Order shall be approved by UNO prior to any additional work being performed.

- a. Change Orders cannot be approved without the proper breakdown as required by the Supplementary Conditions, Section 7.2. The same requirements apply to time extension requests.
- b. University of New Orleans needs only the original and one (1) copy of backup.
- c. Change Orders should be rounded to the nearest whole dollar amount.
- d. User paid change orders are **not** allowed.
- e. User requested change orders are to be avoided.

4. Invoice Procedure:

- a. Invoices may be submitted in electronic format.
 - 1) Contractor shall submit one Certificate for Payment directly to the Designer. University of New Orleans – Application and Certification for Payment forms shall be used for submittal. Certificate for payment need **not** be notarized.
 - 2) After review, the Designer shall process the Certificate as promptly as possible, in any case within seven (7) days. If a Certificate is held for any reason, written notice stating the reason for delay should be given the owner and the contractor. If a Certificate is changed for any reason, changes will be made to all copies.
 - 3) Distribution of copies shall be as follows:
 - a) Designer forwards one Certificate for Payment directly to University of New Orleans with a transmittal letter/memo.
 - b) Designer forwards copy of transmittal letter and one (1) copy of Certificate to Contractor. One (1) copy retained for Designer records. One (1) copy sent to User Agency.
- b. During construction, designer's invoices shall be sent directly to University of New Orleans.
- c. If federal funds are involved, compliance with additional regulations is required including but not limited to:
 - Davis Bacon Act - Wage rate & payroll records.
 - Drug Free Workplace Act
 - Civil Rights EOP poster with name of EOP person shown.
- d. Stored Materials must be on site for payment to be made. Payment will not be made for materials stored in a bonded warehouse or elsewhere.
- e. An Original 45 Day Clear Lien and an Original Consent of Surety (AIA Form G707) is required prior to final payment to the contractor.

5. Prior Approval:

Only items as specified or prior approved in accordance with the Contract Documents will be incorporated into the project. Approval of shop drawings does not relieve Contractor of complying with the Prior Approval clause.

6. Testing Lab:

- a. The Owner will engage and pay for the testing laboratory if required. If the Contractor obtains the services of a testing laboratory, he will be responsible for all costs for that laboratory
- b. Designer should furnish Testing Lab with written notice of types and frequency of required tests. Set up procedure for Testing Lab notification.
- c. No off site testing unless called for in the Contract Documents.
- d. University of New Orleans will pay a minimum of standby time. Contractor may be billed if not well controlled.
- e. Testing Lab invoices shall be submitted by hardcopy or in electronic format through the Designer, who in turn acknowledges their recognition of services submitted.

7. Project Sign

When a project sign is specified, select location.

8. Meetings:

Establish a time and place for the Monthly Meeting. Designer shall notify UNO prior to and provide minutes of all meetings to all participants within 7 days.

9. Roofing:

Pre-roofing Conference - establish a direct line of communication, iron out initial questions regarding the project and to review project submittal requirements. This conference should be held shortly after award of the roofing contract and a minimum of six (6) weeks prior to the anticipated start of roofing. Attendance by general contractor, roofing subcontractor and manufacturer's representative is required. A letter from the manufacturer stating the roofer is an approved applicator and sample warranties shall be

submitted at the Pre-roofing Conference, if not before.

- a. General Guidelines for Low Sloped Roofs
 - 1) Details in compliance with NRCA and Roof Manufacturer
 - 2) Concrete Decks are to be primed.
 - 3) Nailable Decks; Red Rosin sheet is required on wood decks.
 - 4) Fastening per manufacturer's requirements to comply with I-90 FM rating.
 - 5) Asphalt
 - a) Type IV asphalt shall be used for all modified bitumen mop-down systems
 - b) Temperature at the point of application shall be the EVT temperature plus or minus 25 degrees.
 - 6) Insulation
 - a) All wet insulation is to be rejected and removed from the site.
 - b) All insulation joints shall be staggered, including daily tie-ins.
 - 7) Metal
 - a) Color Selection
 - b) Gravel guard - use minimal raised lip for areas where drainage is over the edge.
 - 8) Drainage: Most guarantees prohibit water remaining on the roof more than 48 hours.
 - 9) Roofing guarantees
 - a) No dollar limit. Guarantee system from the deck up, naming all products within the system.
 - b) No language about "no pay, no guarantee".
 - c) Warranty start date to be on or very near date of Acceptance of Building Contract. The roofing warranty required for his project must meet the requirements of UNIVERSITY OF NEW ORLEANS. It is important that the roofing manufacturer and applicator are aware of this. An incomplete or incorrect warranty **will** delay acceptance.
 - d) Supplementary Conditions Section 13.3.3, the Nineteenth Judicial Court in and for the Parish of East Baton Rouge, State of Louisiana shall have sole jurisdiction in any action brought under this contract.
 - 10) Manufacturer's specification to be used in support of designer's specification.

Manufacturer's requirements are a minimum, use designer's specification if it exceeds.

- 11) Track weather days including predicted rain percentage. Submit to designer monthly with pay estimate.

Pre-application Conference to verify readiness of the project structure, review assignments of Preliminary Conference, scan last minute details, changes or corrections and to review the anticipated schedule of progress. This conference should be held within one (1) week of roofing application. Attendance by general contractor, roofing subcontractor and superintendent or foreman and manufacturer's representative is required.

Representatives of the designer and UNO shall be visiting the site to make sure the roof is being installed per the manufacturers' requirements and the Contract Documents. If found not in compliance, tests and corrective measures may be required to prove the roof is acceptable. Tests include Blow-Off Testing, etc.

Moisture Survey - When installation is complete, UNO will arrange to have a moisture survey performed. Deficiencies will be noted, either on the roof with paint or on roof plan drawing or both. After these deficiencies are corrected, this office will arrange to have these areas resurveyed. If these deficiencies are found not to be corrected and additional survey time is required, then the cost of this time will be assessed against the contractor at a rate of \$50.00 per hour through a credit change order.

Designer: Please fill out "Roof Completion Information" form and submit it with the Recommendation of Acceptance. If the roofed section is new, a scaled drawing is also needed. Preferably, this drawing would be on AutoCAD in compliance with the layers specified in our "Instructions to Designers."

10. General Correspondence:

- a. Project Number must be on all correspondence.
- b. Contractor shall copy University of New Orleans on any correspondence **if**:
 - 1) It involves a controversial issue.

2) It relates to information requests to the Designer that had not been furnished in a timely manner.

11. Miscellaneous Items to be Discussed as Necessary:

- a. Shop drawings, samples, hardware, and color schedules. Shop drawings submitted to the user by the designer are for record purposes only, not for approval. Approval is the sole responsibility of the designer.
COLOR SELECTION: If the User does not approve color selections in a timely manner, the Designer, in consultation with UNO, shall make the selections, which will be final.
- b. Establish the location and type of temporary facilities and utilities. Establish how payment for temporary utilities will be made and how costs will be tracked?
- c. Outages/Interruptions of Services. Contractor is to request, in writing, all outages/interruptions to the User. The amount of advance notice is to be determined by the user. Coordination of outages or interruptions is the responsibility of the contractor
- d. Contractor use/access to pertinent buildings and facilities.
- e. Location of staging area and/or fencing.
- f. Site and stored material security is the contractor's responsibility.
- g. Use of site, parking of vehicles, decals and/or permits for parking
- h. The User shall have first refusal of salvaged materials. Where are they to be delivered? The contractor is responsible for the disposition of all other materials in accordance with laws and regulations.

- i. Safety and First Aid. This is the contractor's responsibility.
- j. Procedure for keeping Record Documents. Contractor to record as-built information that varies from the contract documents, on (1) one set of prints, to be furnished to the Designer at completion of the job. As-builts are prepared by Designer, inclusive of Supplemental Drawings, the Contractor, based on the as-built work and the required adjustments to the contract documents and the change orders, and shall be submitted timely to University of New Orleans. Plans shall be marked "**AS-BUILT**". As-built drawings submitted to UNO shall consist of (2) two full size paper sets of Record Drawings (As-Built) prepared by the Designer. Also required are (2) two disks or flash drives of As-built drawings in AutoCAD (.dwg) and .pdf format, including electronic copies of the bid specifications and addenda. Acceptable As-builts are required prior to the Designer's final payment.
- k. Use of any Asbestos Containing materials is prohibited.
- l. Pictures or videos of existing conditions may be made.
- m. Near the end of the project the UNO Project Manager will review the work to determine compliance with UNO's ADA Non-Comprehensive Field Checklist. Any accessibility problems identified in this review shall be corrected before the project can be considered complete.

12. Pre-Close Out Conference

When the project reaches 75 to 80% completion the Designer will schedule a meeting with the Contractor, UNO and the User to review the requirements and procedures for the Final Inspection and Acceptance.

SCHEDULE OF VALUES

The Contractor is to use the following format. The total Contract Cost is to be itemized in each Subsection listed (as applicable)

DIVISION 01 – GENERAL REQUIREMENTS	Quantity	Cost
01 00 00 General Requirements	_____	_____
01 32 50 Record Drawings, Shop Drawings, Product Data, Samples and other submittals.	_____	_____
	TOTAL	_____
DIVISION 02 – EXISTING CONDITIONS		
02 30 00 Subsurface Investigation	_____	_____
02 41 00 Demolition	_____	_____
	TOTAL	_____
DIVISION 03 – CONCRETE		
03 01 00 Maintenance of Concrete	_____	_____
03 11 00 Concrete Forming	_____	_____
03 15 00 Concrete Accessories	_____	_____
03 20 00 Concrete Reinforcing	_____	_____
03 30 00 Cast-in-place Concrete	_____	_____
03 40 00 Precast Concrete	_____	_____
03 50 00 Cast Decks & Underlayment	TOTAL	_____
DIVISION 04 – MASONRY		
04 01 00 Maintenance of Masonry	_____	_____
04 05 13 Masonry Mortaring	_____	_____
04 05 19 Masonry Anchorage & Reinforcing	_____	_____
04 05 23 Masonry Accessories	_____	_____
04 20 00 Unit Masonry	TOTAL	_____
DIVISION 05 – METALS		
05 05 23 Metal Fastenings	_____	_____
05 10 00 Structural Metal Framing	_____	_____
05 20 00 Metal Joists	_____	_____
05 30 00 Metal Decking	_____	_____
05 50 00 Metal Fabrications	_____	_____
05 58 00 Formed Metal Fabrications	TOTAL	_____
DIVISION 06 – WOOD, PLASTICS, & COMPOSITES		
06 05 23 Fastening and Adhesives	_____	_____
06 10 00 Rough Carpentry	_____	_____
06 13 00 Heavy Timber	_____	_____
06 17 00 Shop-fabricated Structural Wood	_____	_____
06 20 00 Finish Carpentry	SUB-TOTAL	_____

DISISION 06 – WOOD, PLASTICS, &
COMPOSITES (CONTINUES)

06 40 00	Architectural Woodwork	_____	_____
06 60 00	Plastic Fabrications	_____	_____
06 80 00	Composite Fabrications	_____	_____
	TOTAL		_____

DIVISION 07 – THERMAL AND MOISTURE
PROTECTION

07 10 00	Dampproofing and Waterproofing	_____	_____
07 18 00	Traffic Coatings	_____	_____
07 19 00	Water Repellents	_____	_____
07 21 00	Thermal Insulation	_____	_____
07 24 00	Exterior Insulation & Finish Systems	_____	_____
07 25 00	Weather Barriers	_____	_____
07 31 00	Shingles and Shakes	_____	_____
07 32 00	Roof Tiles	_____	_____
07 40 00	Roofing and Siding Panels	_____	_____
07 50 00	Membrane Roofing	_____	_____
07 60 00	Flashing and Sheet Metal	_____	_____
07 61 00	Sheet Metal Roofing	_____	_____
07 70 00	Roof & Wall Specialties and Accessories	_____	_____
07 80 00	Fire and Smoke Protection	_____	_____
07 90 00	Joint Protection	_____	_____
07 95 00	Expansion Control	_____	_____
	TOTAL		_____

DIVISION 08 – OPENINGS

08 11 00	Metal Doors and Frames	_____	_____
08 14 00	Wood Doors	_____	_____
08 15 00	Plastic Doors	_____	_____
08 30 00	Specialty Doors and Frames	_____	_____
08 41 00	Entrances and Storefronts	_____	_____
08 44 00	Curtain Wall and Glazed Assemblies	_____	_____
08 51 00	Metal Windows	_____	_____
08 52 00	Wood Windows	_____	_____
08 53 00	Plastic Windows	_____	_____
08 56 00	Special Function Windows	_____	_____
08 60 00	Roof Windows and Skylights	_____	_____
08 70 00	Hardware	_____	_____
08 80 00	Glazing	_____	_____
08 90 00	Louvers and Vents	_____	_____
	TOTAL		_____

DIVISION 09 – FINISHES

09 22 00	Supports for Plaster and Gypsum Board	_____	_____
09 23 00	Gypsum Plastering	_____	_____
09 24 00	Portland Cement Plastering	_____	_____
09 29 00	Gypsum Board	_____	_____
09 30 00	Tiling	_____	_____
	SUB-TOTAL		_____

DIVISION 09 – FINISHES (CONTINUED)

09 50 00	Acoustical Ceilings	_____	_____
09 54 00	Specialty Ceilings	_____	_____
	Quantity	_____	_____
09 61 00	Flooring Treatment	_____	_____
09 62 00	Specialty Flooring	_____	_____
09 63 00	Masonry Flooring	_____	_____
09 64 00	Wood Flooring	_____	_____
09 65 00	Resilient Flooring	_____	_____
09 66 00	Terrazzo Flooring	_____	_____
09 68 00	Carpeting	_____	_____
09 69 00	Access Flooring	_____	_____
09 97 00	Wall Finishes	_____	_____
09 91 00	Painting	_____	_____
09 97 00	Special Coatings	_____	_____
	TOTAL	_____	_____

DIVISION 10 – SPECIALTIES

10 11 00	Visual Display Surfaces	_____	_____
10 14 00	Signage	_____	_____
10 21 00	Compartments and Cubicles	_____	_____
10 22 00	Partitions	_____	_____
10 26 00	Wall and Door Protection	_____	_____
10 28 00	Toilet, Bath, and Laundry Accessories	_____	_____
10 44 00	Fire Protection Specialties	_____	_____
10 51 00	Lockers	_____	_____
10 56 00	Storage Assemblies	_____	_____
10 82 00	Grilles and Screens	_____	_____
	TOTAL	_____	_____

DIVISION 11 – EQUIPMENT

11 15 00	Security, Detention, and Banking Equipment	_____	_____
11 19 00	Detention Equipment	_____	_____
11 23 00	Commercial Laundry and	_____	_____
	Dry Cleaning Equipment	_____	_____
11 26 00	Unit Kitchens	_____	_____
11 27 00	Photographic Processing Equipment	_____	_____
11 40 00	Foodservice Equipment	_____	_____
11 51 00	Library Equipment	_____	_____
11 52 00	Audio-Visual Equipment	_____	_____
11 53 00	Laboratory Equipment	_____	_____
11 61 00	Theater and Stage Equipment	_____	_____
11 65 00	Athletic and Recreational Equipment	_____	_____
11 70 00	Healthcare Equipment	_____	_____
	TOTAL	_____	_____

DIVISION 12 – FURNISHINGS

12 20 00	Window Treatments	_____	_____
12 30 00	Casework	_____	_____
12 40 00	Furnishings and Accessories	_____	_____
12 50 00	Furniture	_____	_____
	TOTAL	_____	_____

DIVISION 13 – SPECIAL CONSTRUCTION

13 10 00	Special Facility Components		
13 34 00	Fabricated Engineered Structures		
13 49 00	Radiation Protection		
	TOTAL		

DIVISION 14 – CONVEYING EQUIPMENT

14 20 00	Elevators		
14 30 00	Escalators and Moving Walks		
14 40 00	Lifts		
14 80 00	Scaffolding		
	TOTAL		

DIVISION 21 – FIRE SUPPRESSION

21 10 00	Water-Based Fire-Suppression Systems		
	Piping		
21 20 00	Fire-Extinguishing Systems		
21 30 00	Fire Pumps		
	TOTAL		

DIVISION 22 – PLUMBING

22 07 00	Plumbing Insulation		
22 11 00	Facility Water Distribution		
22 13 00	Facility Sanitary Sewerage		
22 14 00	Facility Storm Drainage		
22 30 00	Plumbing Equipment		
22 40 00	Plumbing Fixtures		
	TOTAL		

DIVISION 23 – HEATING, VENTILATING, & AIR-
CONDITIONING

23 05 93	Testing, Adjusting, & Balancing for HVAC		
23 07 00	HVAC Insulation		
23 09 00	Instrumentation & Control for HVAC		
23 13 00	Facility Fuel-Storage Tanks		
23 20 00	HVAC Piping and Pumps		
23 30 00	HVAC Air Distribution		
23 40 00	HVAC Air Cleaning Devices		
23 50 00	Central Heating Equipment		
23 60 00	Central Cooling Equipment		
23 70 00	Central HVAC Equipment		
	TOTAL		

DIVISION 26 – ELECTRICAL

26 09 00	Instrumentation & Control for Electrical Systems		
26 10 00	Medium-Voltage Electrical Distribution		
26 20 00	Low-Voltage Electrical Transmission		
26 27 00	Low-Voltage Distribution Equipment		
26 30 00	Facility Electrical Power Generating & Storage Equipment		
26 40 00	Electrical and Cathodic Protection		
26 50 00	Lighting		
	TOTAL		

DIVISION 27 – COMMUNICATIONS

27 10 00	Structured Cabling		
27 20 00	Data Communications		
27 30 00	Voice Communications		
27 40 00	Audio-Video Communications		
27 50 00	Distributed Communications & Monitoring Systems		
		TOTAL	

DIVISION 28 – ELECTRONIC SAFETY AND
SECURITY

28 10 00	Electronic Access Control & Intrusion Detection		
28 20 00	Electronic Surveillance		
28 30 00	Electronic Detection and Alarm		
28 40 00	Electronic Monitoring and Control		
		TOTAL	

DIVISION 31 – EARTHWORK

31 10 00	Site Clearing		
31 20 00	Earth Moving		
31 31 00	Soil Treatment		
31 32 00	Soil Stabilization		
31 40 00	Shoring and Underpinning		
31 50 00	Excavation Support and Protection		
31 60 00	Special Foundations and Load- Bearing Elements		
		TOTAL	

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 10 00	Bases, Ballasts, and Paving		
32 30 00	Site Improvements		
32 90 00	Planting		
		TOTAL	

DIVISION 33 – UTILITIES

33 10 00	Water Utilities		
33 30 00	Sanitary Sewerage Utilities		
33 40 00	Storm Drainage Utilities		
33 50 00	Fuel Distribution Utilities		
33 60 00	Hydronic & Steam Energy Utilities		
33 70 00	Electrical Utilities		
33 80 00	Communications Utilities		
		TOTAL	

DIVISION 34 – TRANSPORTATION

34 00 00	Transportation		
		TOTAL	

DIVISION 35 – WATERWAY AND MARINE
CONSTRUCTIONS

35 00 00	Waterway and Marine construction		
		TOTAL	

DIVISION 40-43 – PROCESS EQUIPMENT

DIVISION 44 – POLLUTION CONTROL
EQUIPMENT

44 40 00	Water Treatment Equipment	_____	_____
44 41 00	Packaged Water Treatment Plants	_____	_____
44 50 00	Solid Waste Control	_____	_____
		TOTAL	_____

DIVISION 45 – INDUSTRY SPECIFIC
MANUFACTURING
EQUIPMENT

DIVISION 48 – ELECTRICAL POWER
GENERATION

48 10 00	Electrical Power Generation Equipment	_____	_____
48 70 00	Electrical Power Generation Testing	_____	_____
		TOTAL	_____

University of New Orleans
CHANGE ORDER

PROJECT NAME:	<hr/>	CHANGE ORDER No.	<hr/>
PROJECT NUMBER:	<hr/>	CONTRACT DATE:	<hr/>
CONTRACTOR:	<hr/>	CFMS / SRM No(s).	<hr/>
SITE CODE:	<hr/>	NOTICE TO PROCEED DATE:	<hr/>
	STATE ID:	<hr/>	

You are directed to make the following change(s) in this contract. Attach SUMMARY, BREAKDOWN and/or UNIT PRICE BREAKDOWN forms as required and give a brief description of the change(s) below.

The Original Contract Sum	<hr/>
Total Changes by Previous Change Order(s)	<hr/>
Current Contract Sum	<hr/>
Contract Sum will be (increased) (decreased) (unchanged) by this Change Order	<hr/>
New Contract Sum	<hr/>
The Original Contract Completion Date and Contract Time.	Date: <hr/> DAYS
Total Time extended by Previous Change Order(s)	<hr/> DAYS
Contract Time will be (increased) (decreased) (unchanged) by this Change Order	<hr/> DAYS
New Contract Completion Date & Revised Contract Time	Date: <hr/> DAYS
Added Building Area	<hr/> (Sq. Ft.)

NOTE: No additional increase in time or money will be considered for a Change Order item after it has been executed.

RECOMMENDED	ACCEPTED	APPROVED
Designer's Name:	Contractor's Name:	Project Manager:
<hr/>	<hr/>	<hr/>
Address:	Address:	University of New Orleans
<hr/>	<hr/>	
Email Address:	Email Address:	
<hr/>	<hr/>	
By:	By:	By:
<hr/>	<hr/>	<hr/>
Date:	Date:	Date:
<hr/>	<hr/>	<hr/>

UNIVERSITY OF NEW ORLEANS Use Only

Classification	Amount	Classification	Amount
Omission (Type "O")*	<hr/>	Miscellaneous (Type "M")	<hr/>
Error (Type "E")*	<hr/>	Owner Requested (Type "R")	<hr/>

Senior Manager/Assistant Director approval:

COMMENTS:

Construction Contract Change Order SUMMARY

State of Louisiana University of New Orleans State Project No. _____ WBS No. _____ Project Name: _____	Item No. _____ RFI No. (or COR, CPR, etc.) _____ Date: _____
---	--

Contractor Name: _____

Description of Work: _____

General Contractor Direct Costs - Breakdown No. _____
 (See attached breakdown)

Total General Contractor Cost	_____ %	
(General Contract Direct Cost plus OH&P)	(Max: 8%)	

Subcontractor Cost Breakdowns
 (See attached.)

		A	B	C
Subcontractor Name	Breakdown No.	Total Direct Cost	OH&P (Max 8%)	Total A+(A X B)
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____
_____	_____	_____	%	_____

Subcontractor Direct Costs Total	\$	-
(Sum column A)		

Subcontractor Direct Costs + Subcontractor OH&P
 (Sum column C)

General Contractor OH&P on Subcontractor Direct Cost at	_____ %	
(Sum column A times General Contractor OH&P rate.)	(Max: 8%)	

Total Subcontractor Costs	
(Subcontractor Direct Costs + OH&P + General Contractor OH&P)	

Change Order Subtotal	
(Sum of Total General Contractor Costs and Total Subcontractor Costs)	

Performance and Payment Bond at	0.75 %	
(Change Order Subtotal times Performance and Payment Bond rate)		

Amount will be <input type="checkbox"/> increased <input type="checkbox"/> decreased <input type="checkbox"/> unchanged by	
(Sum of Change Order Subtotal and Performance and Payment Bond)	

Days will be <input type="checkbox"/> increased <input type="checkbox"/> decreased <input type="checkbox"/> unchanged by	
(Attach supporting data such as meteorological reports)	

Construction Contract Change Order BREAKDOWN

State of Louisiana	Breakdown No. _____
University of New Orleans	Item No. _____
State Project No. _____	RFI No. (or COR, CPR, etc.) _____
WBS No. _____	Date: _____
Project Name: _____	

Contractor/Subcontractor Name: _____

Direct Cost of Work :

A. Labor	Check here if explained on the Comment Sheet		Hourly Wage Rate	Hours	Total Cost
1 _____	<input type="checkbox"/>		_____	_____	_____
2 _____	<input type="checkbox"/>		_____	_____	_____
3 _____	<input type="checkbox"/>		_____	_____	_____
4 _____	<input type="checkbox"/>		_____	_____	_____
5 _____	<input type="checkbox"/>		_____	_____	_____
6 _____	<input type="checkbox"/>		_____	_____	_____
7 _____	<input type="checkbox"/>		_____	_____	_____
			Add Labor Burden @ _____	%	_____

LABOR TOTAL

B. Material		Unit Price	Unit	Units	Total Cost
1 _____	<input type="checkbox"/>	_____	_____	_____	_____
2 _____	<input type="checkbox"/>	_____	_____	_____	_____
3 _____	<input type="checkbox"/>	_____	_____	_____	_____
4 _____	<input type="checkbox"/>	_____	_____	_____	_____
5 _____	<input type="checkbox"/>	_____	_____	_____	_____
6 _____	<input type="checkbox"/>	_____	_____	_____	_____
7 _____	<input type="checkbox"/>	_____	_____	_____	_____
(Copies of invoices may be required.)		Add Tax @ _____		%	_____

MATERIAL TOTAL

C. Equipment		Unit Rate	Unit	Units	Total Cost
1 _____	<input type="checkbox"/>	_____	_____	_____	_____
2 _____	<input type="checkbox"/>	_____	_____	_____	_____
3 _____	<input type="checkbox"/>	_____	_____	_____	_____
4 _____	<input type="checkbox"/>	_____	_____	_____	_____
5 _____	<input type="checkbox"/>	_____	_____	_____	_____
6 _____	<input type="checkbox"/>	_____	_____	_____	_____
7 _____	<input type="checkbox"/>	_____	_____	_____	_____
(Copies of invoices may be required.)		Add Tax @ _____		%	_____

EQUIPMENT TOTAL

TOTAL DIRECT COST FOR THIS BREAKDOWN:

(Sum A, B & C)

Construction Contract Change Order
BREAKDOWN COMMENT SHEET

State of Louisiana	Breakdown No. _____
University of New Orleans	Item No. _____
State Project No. _____	RFI No. (or COR, CPR, etc.) _____
WBS No. _____	Date: _____
Project Name: _____	

Contractor/Subcontractor Name: _____

A. Labor

No. (From BREAKDOWN Sheet)

—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____

B. Material

—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____

C. Equipment

—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____
—	_____

Construction Contract Change Order

UNIT PRICE BREAKDOWN

State of Louisiana		Breakdown No.	_____
University of New Orleans		Item No.	_____
State Project No.	_____	RFI No. (or COR, CPR, etc.)	_____
WBS No.	_____	Date:	_____
Project Name:	_____		

Contractor/Subcontractor Name: _____

Unit Price Tabulation

(Unit prices must be included in the bid or clearly defined in a standard, industry recognized pricing reference. The pricing reference shall be identified herein.)

Unit Price Description	Reference*	Unit Price	Units	Total
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

* Reference Legend: _____

Unit Price Total:
(Sum Total column)

University of New Orleans

Instructions for Change Order Back Up Forms

The General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition, and the Supplementary Conditions provide for changes in the contract in the form of change orders. The costs of such changes must be carefully, clearly and accurately documented. Facility Planning & Control has prepared a set of forms to be used to provide this documentation in a consistent format that is in accordance with the Contract Documents.

Change orders will typically contain one or more items of work. Each item of work will typically include work by the general contractor and/or one or more subcontractors. The documentation begins with a breakdown of the work of the contractor and each subcontractor. This is prepared using the form entitled "BREAKDOWN." One form for the General Contractor and one for each subcontractor. Each breakdown will be summarized on the form entitled "SUMMARY." Each item of work will, in turn, be summarized on the change order itself. This should be on the face of the change order.

The forms are available as a Microsoft Excel worksheet for ease of preparation, with formulas established for mark-ups and other basic mathematical operations.

These forms are to be used as provided. Any alteration to the forms may cause the change order to be rejected.

GENERAL: (Refer to Article 7 of the Supplementary and General Conditions)

Forms - There are five forms to be used for all Facility Planning and Control change orders: CHANGE ORDER form, SUMMARY, BREAKDOWN, BREAKDOWN COMMENT SHEET and UNIT PRICE BREAKDOWN. The CHANGE ORDER form is the highest level and is the official, signed document. A CHANGE ORDER form may include one or more items of work, each of which is backed up by a SUMMARY. Each SUMMARY will be backed up with one or more BREAKDOWNs. Any unusual rates, unit costs or quantities may be explained on the COMMENT SHEET. It's simple. The BREAKDOWN form must be used for the general contractor and any subcontractor, at any level, that is to get OH&P. Use as many as needed.

Unit Pricing - Labor, material and equipment breakdown is the standard method of pricing change orders for Facility Planning and Control. However, unit pricing may be considered in some circumstances if the unit prices are clearly established such as by unit prices that were included in the bid. These prices may also be derived from a construction industry standard reference such as R.S. Means. If unit prices were included in the bid they are acceptable for pricing change order work and, in fact, must be used for any work that is included in the change order for which they were established. The UNIT PRICE BREAKDOWN is provided for this purpose.

CHANGE ORDER:

Project identification information: Complete as required. The Site Code, State ID and CFMS / SRM No(s). (contract numbers) can be obtained from the FP&C Project Manager.

Description: This will include a list of each attached SUMMARY that makes up this change order and a brief statement of the work included in each.

New Contract Sum: Calculate the new contract amount using the original contract amount, previous change orders and the new change order. Select the appropriate word for increase, decrease or unchanged, and delete the terms that don't apply.

New Contract Completion Date and Revised Time: Calculate the new contract time using the original Contract Completion Date and Contract Time, previous changes in time and the change in time by this change order. Select the appropriate word for increase, decrease or unchanged and delete the terms that don't apply. Show days in the main column and the date in the blank indicated.

Added Building Area: Show any building area added by this change order. If none, enter "None."

RECOMMENDED: Show the Designer's name and address, sign on the line indicated as "By:" and date on the indicated line.

ACCEPTED: Show the Contractor's name and address, sign on the line indicated as "By:" and date on the indicated line.

APPROVED: For approval by FP&C.

SUMMARY: (Refer to Article 7 of the Supplementary and General Conditions)

Item No.: Show the Item number as it will appear on the CHANGE ORDER Form. Note: This may be one of several items included in one CHANGE ORDER form.

RFI No.: Show the number of the request for information. This may be known by another name such as COR (Change Order Request,) CPR (Change Proposal Request,) etc.

Project No., WBS No., Date, Project Name. Complete as appropriate.

Contractor: Name of General Contractor.

Description of Work: Give a brief description of the work included in this **Item**.

General Contractor Direct Costs: Show the total General Contractor Cost from the BREAKDOWN and show the Breakdown No. in the space provided.

General Contractor Total Cost: Show the total General Contractor Cost plus the General Contractor's overhead and profit. The overhead and profit shall not exceed 8% of the Direct Cost.

Subcontractor Cost Breakdowns: List each subcontractor, Breakdown No. and Total Direct Cost (in column "A") from the attached BREAKDOWN sheets. Show the subcontractor's overhead and profit percentage in column "B" and show the calculated total of the direct cost plus the percentage of the direct cost in column "C." If the electronic version of the form is being used, column "C" will be automatically calculated. The overhead and profit shall not exceed 8% of the Total Direct Cost.

Subcontractor Direct Costs Total: Sum of column "A." This will be used to calculate the General Contractor's overhead and profit on the subcontractors' work. If the electronic version is being used, this will be an automatic calculation.

Subcontractor Direct Costs + Subcontractor OH&P: Sum of column "C." This represents the total amount that subcontractors will be paid. Automatic calculation.

General Contractor OH&P on Subcontractor Direct Cost at ____%. The contractors overhead and profit on the subcontractors' direct cost (without subcontractor OH&P.) Enter the percentage of the contractor's OH&P on the subcontractors' work (not to exceed 8%) and show the calculated total of the subcontractors' direct cost plus the percentage of the direct cost in the space. Automatic calculation.

Total Subcontractor Costs: Total of the last two spaces.

Change Order Subtotal: Total of change order except bond.

Performance and Payment Bond at ____%: Enter bond percentage (from amount provided by the contractor at the Pre-Construction Conference) and calculate the amount for the bond.

Amount will be (increased) (decreased) (unchanged) by: Add bond and calculate total change order amount. Indicate "increase," "decrease" or "unchanged", and **delete the terms that don't apply**.

Days will be (increased) (decreased) (unchanged) by: Show the number of days to be added or deleted from the contract, if any, due to changes in scope, adverse weather, unusual delays or other factors, **only** if it is proven the critical path is affected. Note that a change in scope does not necessarily indicate a change in time. Indicate "increased," "decreased" or "unchanged", and **delete the terms that don't apply.**

BREAKDOWN:

Item No. Show the Item number as it will appear on the CHANGE ORDER Form and the SUMMARY.

Note: This may be one of several items included in one CHANGE ORDER form.

RFI No.: Show the number of the request for information. This may be known by another name such as COR (Change Order Request,) CPR (Change Proposal Request,) etc.

Project No., WBS No., Date, Project Name. Complete as appropriate.

Contractor: Name of General Contractor or Subcontractor.

Direct Cost of Work:

Check here if explained on the Comment Sheet: If rates, unit costs or quantities may appear unreasonable compared to standard costs or quantities the reasons may be explained on the attached comment sheet and the box checked to indicate that there is an explanation.

A. Labor: Include the "wages paid" hourly direct labor and/or foreman necessary to perform the required change. "Wages paid" is the amount actually paid the employee, not the fully burdened charge rate used in the bid, etc. Supervisory personnel in district or home office shall not be included. Do not include the project superintendent, except as permitted by Section 7.2 of Supplementary Conditions. Supervisory personnel on the job-site, but with broad supervisory responsibility shall not be included as Direct Labor, except as permitted by Section 7.2 of Supplementary Conditions. Typically there will be only one superintendent on the job and his/her time shall not be included, except as permitted by Section 7.2 of Supplementary Conditions. Typically all other employees are eligible for inclusion. List by job title each person employed on the work, his/her hourly rate, the number hours work and the extended Total Cost. Do not list crews unless the rates for them are readily available in standard cost estimating references such as R. S. Means. Add the labor burden that was provided at the Pre-Construction conference and in compliance with the Contract Documents, and total the amounts in LABOR TOTAL.

B. Material: Include the acquisition cost of all materials directly required to perform the required change. List each material used in the work, the price per unit, name of the unit, the number of units used and the extended Total Cost. Add the tax rate and tax and total the amounts in MATERIAL TOTAL.

C. Equipment: Include the rental cost of equipment items necessary to perform the change. For company-owned equipment items, include documentation of internal rental rates submitted at the pre-construction conference. Charges for small tools, and craft specific tools are not allowed. List each piece of equipment used in the work, the rate by units of time (hour, day, week, etc.,) number of units of time the piece was in service on the work and the extended total cost. Add the tax rate, calculate the tax and total the amounts in EQUIPMENT TOTAL.

TOTAL DIRECT COST FOR THIS BREAKDOWN: Total of A. Labor, B. Material and C. Equipment. This is the amount that will be carried forward to the SUMMARY Sheet. This amount does **NOT** include Overhead and Profit. This will be added on the SUMMARY Sheet.

COMMENTS SHEET:

The COMMENTS SHEET uses the same heading as the SUMMARY and BREAKDOWN.

The COMMENTS SHEET includes three sections, one each for A. Labor, B. Materials and C. Equipment. These correspond to the sections in the BREAKDOWN. Each comment should be entered in the section to which it corresponds on the BREAKDOWN and numbered to correspond to the appropriate line. Comments are to used only to explain unusual rates, costs or quantities.

UNIT PRICE BREAKDOWN:

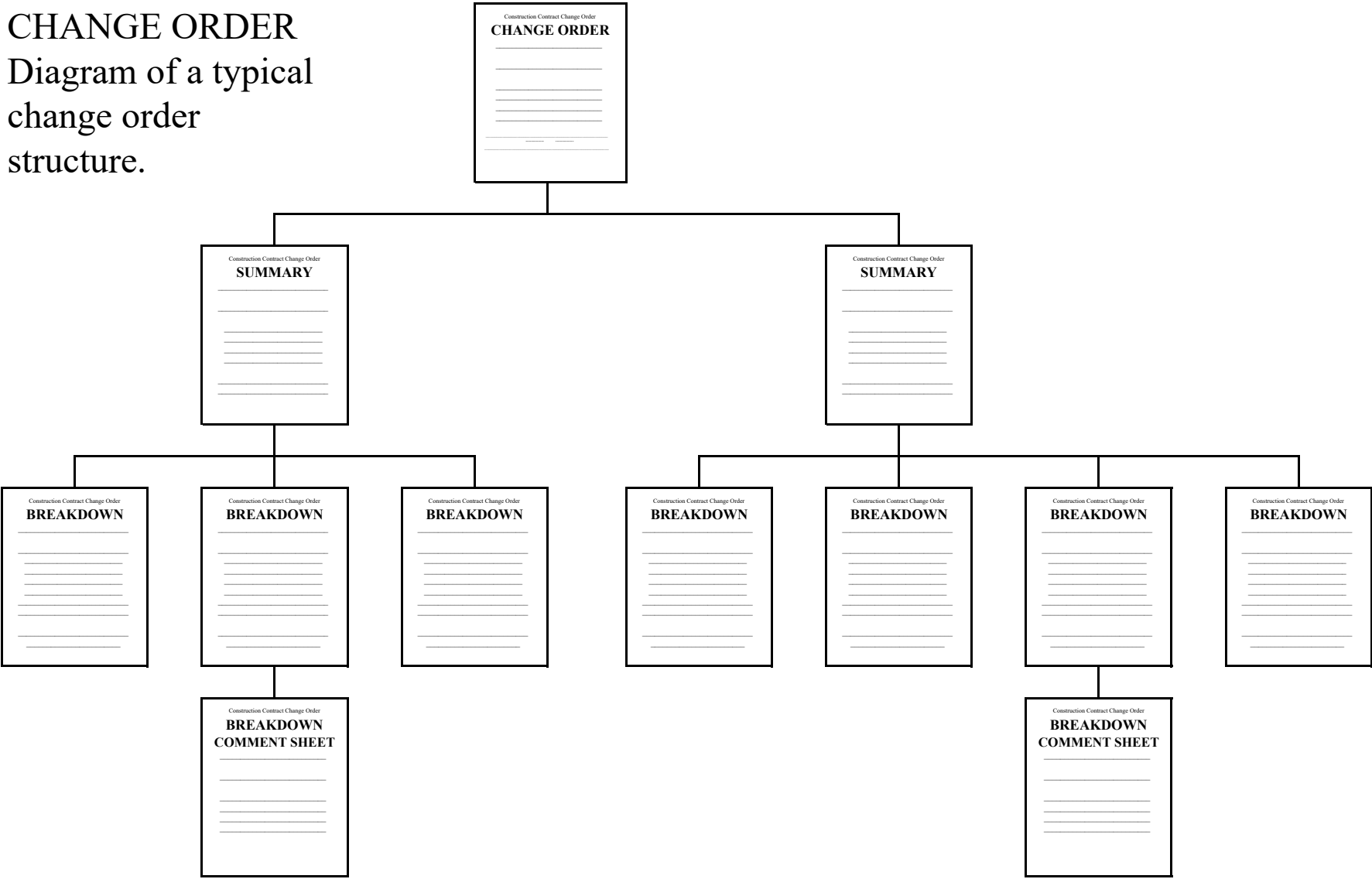
The UNIT PRICE BREAKDOWN uses the same heading as the BREAKDOWN.

The UNIT PRICE BREAKDOWN is similar to the BREAKDOWN.

Unit Price Tabulation: Each unit price is listed along with its corresponding price and the number of units used in the work. The price and number of units are multiplied to provide the total cost of each unit price item. The pricing reference, such as the bid form for the project or a construction industry standard reference, must be cited for each unit price. This may be more fully described in "Reference Legend,"

Unit Price Total: Sum the unit prices to obtain the total cost for unit prices.

CHANGE ORDER
Diagram of a typical
change order
structure.



❖ NOT FOR RECORDATION PURPOSES ❖

University of New Orleans
RECOMMENDATION OF ACCEPTANCE

TO: University of New Orleans
2000 Lakeshore Drive
New Orleans, LA 70148

FROM: _____

Design Firm Name and Address

DATE: _____

PROJECT NAME: _____

PROJECT NUMBER: _____ WBS No. _____

SITE CODE: _____ STATE ID: _____ CFMS/SRM #: _____

CONTRACTOR: _____

ORIGINAL CONTRACT AMOUNT: \$ _____

FINAL CONTRACT AMOUNT: \$ _____

FINAL BUILDING AREA (SQ. FEET): _____

I certify that, to the best of my knowledge and belief, this project is substantially complete in accordance with the Plans and Specifications to the point where it can be used for the purpose which was intended. It is recommended that it be accepted.

DATE OF ACCEPTANCE: _____

CONTRACT DATE OF COMPLETION: _____

NUMBER OF DAYS (OVERRUN) (UNDERRUN) (As of Acceptance Date) _____

LIQUIDATED DAMAGES PER DAY STIPULATED IN CONTRACT \$ _____

VALUE OF PUNCH LIST \$ _____

Was part of project occupied prior to Acceptance? ☐ No ☐ Yes, see attached Partial Occupancy Forms

ADA Certificate of Compliance Required? ☐ No ☐ Yes, see attached form.

La. Building Code Certificate of Compliance Required? ☐ No ☐ Yes, see attached form.

ROOF GUAR-MANUF: _____ START DATE: _____ END DATE: _____

ROOFER: _____ START DATE: _____ END DATE: _____

Signed: _____
DESIGNER

FOR USE OF PROJECT MANAGER:

Signed: _____
PROJECT MANAGER

c: User Agency

❖ NOT FOR RECORDATION PURPOSES ❖

CERTIFICATE OF COMPLIANCE
with
Americans with Disabilities Act and Architectural Barriers Act
Accessibility Guidelines

TO: University of New Orleans
2000 Lakeshore Drive
New Orleans, LA 70148

FROM:

Design Firm Name and Address

PROJECT NAME:

PROJECT No.:

WBS No.:

SITE CODE: _____ STATE ID: _____

DATE OF ACCEPTANCE: _____

I, _____ certify that, to the best of my knowledge and belief, this project has been constructed in compliance with the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines as reviewed by the fire marshal.

Designer Signature Date: _____

State of Louisiana
DIVISION OF ADMINISTRATION
Facility Planning and Control

CERTIFICATE OF COMPLIANCE
with
Louisiana Building Code for State Owned Buildings

TO: University of New Orleans
2000 Lakeshore Drive
New Orleans, LA 70148

FROM: _____

Design Firm or Owner/User Name and Address

PROJECT NAME: _____

PROJECT No.: _____

WBS No.: _____

SITE CODE: _____ STATE ID: _____

DATE OF ACCEPTANCE: _____

I, _____ certify that, to the best of my knowledge and belief,
this project has been constructed in compliance with the construction documents determined to be satisfactory
by the State of Louisiana, Division of Administration, Office of Facility Planning and Control.

(Signature of Designer or Owner/User) Date: _____

❖ NOT FOR RECORDATION PURPOSES ❖

University of New Orleans
PARTIAL OCCUPANCY

PROJECT NAME:

PROJECT LOCATION:

PROJECT / PART NUMBER:

CFMS / SRM No.

WBS NUMBER:

CONTRACTOR:

USER AGENCY:

The below described portion of subject project is, to the best of my knowledge and belief, complete to a point where the User desires to use in according with the Contract Documents.

DATE OCCUPIED: _____ .

WARRANTY items covered by Occupancy:

_____ Designer	_____ Date
_____ Contractor	_____ Date
_____ University of New Orleans	_____ Date

Punch List: Attached ☐

 None ☐

c: User Agency, ORM

❖ NOT FOR RECORDATION PURPOSES ❖

SECTION 01000

GENERAL REQUIREMENTS

The general requirements of these Technical Specifications, including amendments and additions thereto, apply to each and every heading included in these Technical Specifications with the same force as though repeated in full under each heading respectively.

1.01 SCOPE

BASE BID:

Provide the materials, labor, equipment and supervision necessary for the completion of all work associated with Chemical Science Annex Fume Hood Controls Replacement in accordance with this Project Manual dated 1-23-25.

Opportunity for the site visit and inspection is provided under "INSTRUCTIONS TO BIDDERS."

1.02 REVIEW OF QUOTING DOCUMENTS

The Contractor shall carefully study and compare the field conditions, Drawings and Technical Specifications and shall at once report to the University Representative errors, inconsistencies or omissions discovered.

Maintain one (1) complete set of Quoting Documents and Change Orders at the site during the work.

1.03 PROJECT MEETINGS

The University Representative will hold a Pre-Construction Conference between the Contractor, his on-site representative, architect/engineer, and the University Representative in order to clarify and direct University policy and specific items of concern as pertain to the Contract. Present copies of the project Schedule of Values, List of Subcontractors and Construction Schedule, etc. to the University Representative in accordance with the "Pre-Construction Conference Agenda."

Progress meetings will be scheduled at the discretion of the University Representative depending on the progress of the work.

1.04 COORDINATION

Coordinate installation schedule with the University Representative so as not to interfere with the ongoing operation of the University. If for any reason, shut down of utilities is required on this project, it is imperative that the University Representative be consulted.

1.05 SUBMITTALS

Submit all required shop drawings, brochures and samples for review by the engineer and University Representative prior to ordering and/or installing materials. Equipment or material ordered and/or installed without review by the University Representative is subject to rejection. Reproduction and edit of the Quoting Documents for use as shop drawings is not permitted.

Shop Drawings: Submit one (1) electronic copy. The electronic copy will be returned with mark ups.

Brochures, Cut Sheets, and Technical Data: Submit one (1) electronic copy. The electronic copy will be returned with mark ups.

Samples: Submit one (1) each to be retained by the University and any additional if these need to be returned.

1.06 QUALITY ASSURANCE

Use new materials of quality acceptable to the University Representative and meeting all applicable regulations as pertain to this project. Remove and replace all material delivered to site which, in the opinion of the Representative, does not meet specifications and quality.

The University expects quality workmanship and only those who are qualified to perform the tasks in their respective trades are acceptable. The term qualified above is understood to mean "Journeymen" skilled in their respective trades. Correct, at no expense to the University, any work performed which, in the opinion of the University Representative, is found unacceptable or not according to code.

1.07 TRAFFIC CONTROL

Coordinate the schedule of delivery vehicles which will interfere with normal campus traffic. When deliveries are made from the street curb, provide sufficient properly attired and equipped flagmen to safely control and maintain the flow of traffic.

It is the policy of the University of New Orleans to provide full access to all disabled individuals in all areas possible. Because of this commitment, contractors, vendors or servicing agencies are cautioned to ensure that their staff is made aware of this commitment. When parking on the campus of this University, it shall be the responsibility of the contractor, vendor or servicing agency to ensure that no sidewalks or access ways are blocked at any time. If temporary blocking is required, the Contractor, shall assume the responsibility for the safe transit of all disabled persons.

Park only in authorized areas; comply with all traffic and parking regulations of the University. The University will furnish the Contractor, at no charge, permits for all vehicles which will be parked in the designated parking areas.

1.08 Work Restrictions

- A. On Site Work Hours: The building is an active classroom/lab facility. Work may need to occur around teaching lab hours. The University is open from 7:00 a.m. to 4:30 p.m. for normal working hours. Work hours after this time frame will need to be approved through the University Representative.

1.09 PROJECT CONDITIONS

- A. Conduct building demolition so University's operations will not be disrupted.
 - 1. Provide not less than 48 hours' notice to the University Representative of activities that will affect University's operations including shut downs.
 - 2. Maintain access to existing exits and other adjacent occupied or used facilities.
 - a. Do not close exits or other occupied or used facilities without written permission from authorities having jurisdiction.
- B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the University Representative. Hazardous materials will be removed by University under a separate contract.
- C. Storage or sale of removed items or materials on-site is not permitted.

1.10 PROTECTION

Protect adjacent buildings and building elements from damage during the work. Protect the site, including trees, shrubs, vegetation and lawn areas; where damage does occur, restore to original condition replacing damaged vegetation and lawn with equal size and species.

Store construction materials with care; distribute the weight to not endanger the building structure.

Contractor shall verify the exact locations of underground utilities. Damage to existing utilities shall be immediately repaired by the Contractor at his own expense to restore the interrupted service. Work at night and/or on weekends if deemed necessary by the University Representative. Restoration may involve repair and/or replacement of damaged section with new, without credit for condition or useable life of the damaged utility.

1.11 ROUGH-IN INSPECTION

At the completion of the rough-in work, before any closing of wall, ceiling, or floor; schedule a rough-in inspection for the University Representative's approval. Give the University Representative a 48-hour notice.

1.12 CLEANUP

Daily, as it accumulates, remove from the work site, all rubbish, debris and unsalvageable material resulting from the work. Do not permit trash to accumulate. Do not use individual building dumpsters for trash disposal.

1.13 SAFETY

Provide sufficient continuous barricades to identify the work site and restrict entry. Where necessary, equip barricades with warning lights for night use.

Provide measures necessary to ensure and maintain security at the work site; protect from theft, vandalism, personal injury, and property damage. Erect and maintain temporary enclosures and barriers to prevent unauthorized access to the site.

Provide fire protection equipment during the construction period, including not less than two (2) ten (10) pound capacity multi-purpose A-B-C dry chemical extinguishers (10A:40BC).

If indicated on the Drawings, provide a temporary fence to isolate the construction site and restrict unauthorized entry. Use chain link fence material, 6'-0 minimum height, on steel or wood posts spaced a 6'-0 maximum and embedded 2'-6 minimum below existing grade; include personnel and/or equipment access gates. Coordinate fence installation with underground utilities - see 1.11; before installation, confirm fence location and layout with the University Representative.

1.14 TEMPORARY UTILITIES

The Contractor may use reasonable amounts of the utility services available to the site at no charge from the University. The University will not provide utility service beyond that existing.

Coordinate tie-in and disconnect to the existing utilities with the University Representative. Any costs associated with tie-in should be borne by the Contractor.

Locate temporary facilities so as not to interfere with the University's use of the Project site and/or surrounding areas. Relocate non-complying facilities at no expense to the University.

1.15 AS-BUILT DOCUMENTS

Maintain one set of Quoting Documents and Change Orders on the job site for recording changes to the work and as-built conditions as they occur. Upon completion of the work (at the acceptance inspection) present the record set to the University Representative. Provide an electronic copy in pdf format also to the University Representative.

1.16 CLOSE OUT DOCUMENTS

Contractor shall provide all close-out documents to owner at Substantial Completion including list of all subcontractors and manufacturers, labor and material warranties, as-builts, keys, tools, attic stock material, and owner & maintenance manuals for each specification section and/or material/equipment. Provide one hard copy and electronic copy of each to University representative.

1.17 TEMPORARY SANITARY FACILITIES

Existing facilities in the building may be used by construction personnel during work on this project.

1.18 MISCELLANEOUS

Only the General Contractor may erect a job sign: 24" by 36" maximum at a location approved by the University Representative before installation.

END

SECTION 01040 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

The General Provisions of the Contract, including General and Supplementary Conditions, and General Requirements apply to the work specified in this Section.

1.2 DESCRIPTION OF WORK

- A. Furnish all labor, materials, tools, and equipment, and perform all operations necessary for cutting and patching work indicated or specified.
- B. Definition: "Cutting-and-Patching" is hereby defined to include but is not necessarily limited to the cutting and patching of nominally completed and previously existing work, in order to accommodate the coordination of the work, or to uncover other work for access or inspection, or to obtain samples for testing, or for similar purposes; and is defined to exclude integral cutting-and-patching during the manufacturing, fabricating, erecting and installing process for individual units of work. Drilling the work to install fasteners and similar operations are excluded from the definition of cutting-and-patching.

1.3 QUALITY ASSURANCE

A. Requirements for Structural Work

General: Do not cut-and-patch work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio. Do not cut or core existing concrete joists or beams.

B. Visual Requirements

General: Do not cut-and-patch work which is exposed on the exterior or exposed in occupied spaces of the building, in a manner resulting in a reduction of visual qualities or resulting in substantial evidence of the cut-and-patch work, both as judged solely by the University Representative. Remove and replace work judged by the University Representative to be cut-and-patched in a visually unsatisfactory manner. All concrete shall be saw cut and removed back to nearest expansion joint.

PART 2 - PRODUCTS

2.1 MATERIALS

General: Except as otherwise indicated or approved by the University Representative, provide materials for cutting-and-patching which will result in equal-or-better work than the work being cut-and-patched, in terms of performance characteristics and including visual effect where applicable. Comply with the original materials where feasible and where recognized that satisfactory results can be produced thereby. Provide matching ceiling tile where existing tile is damaged.

PART 3 - EXECUTION

CUTTING AND PATCHING

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3.1 PREPARATION

- A. Temporary Support: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work.
- B. Protection: Provide adequate protection of other work during cutting-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.

3.2 CUTTING AND PATCHING

- A. Employ skilled tradesmen to perform cutting and patching. Except as otherwise indicated or approved by the University Representative, proceed with cutting-and-patching at the earliest feasible time, in each instance, and perform the work promptly.
- B. Cut work by methods least likely to damage work to be retained and work adjoining.
- C. Patch with seams that are durable and as invisible as possible. Comply with specified tolerances for the work.
- D. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
- E. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch, after patched area has received prime and base coats.

END OF SECTION - 01040

SECTION 02221

BUILDING DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes demolition and removal of the following:
 - 1. Selective Demolition: To allow for installation of new work as indicated on drawings.

1.02 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of any material away from University Property unless indicated to be re-installed, removed and salvaged or recycled. Items to be reinstalled shall be properly stored.

1.03 SUBMITTALS

- A. Schedule of Building Demolition Activities: Indicate detailed sequence of demolition and removal work.
- B. Predemolition Photographs: Show existing conditions of adjoining construction that might be misconstrued as damage caused by building demolition operations. Submit before Work begins.

1.04 PROJECT CONDITIONS

- A. Conduct building demolition so the University's operations will not be disrupted.
 - 1. Provide not less than 72 hours' notice to the University Representative of activities that will affect the University's operations.
 - 2. Maintain access to existing exits and other adjacent occupied or used facilities.
 - a. Do not close exits or other occupied or used facilities without written permission from authorities having jurisdiction.
- B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the University Representative. Hazardous materials will be removed by the University under a separate contract.
- C. Storage or sale of removed items or materials on-site is not permitted.

1.05 COORDINATION

- A. Arrange demolition schedule so as not to interfere with University's on-site operations.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of building demolition required.
- B. If required, request and review Project Record Documents of existing construction provided by the University. The University does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Inventory and record the condition of items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to the University Representative.

3.02 PREPARATION

- A. Removed and Salvaged Items: Comply with the following:
1. University Representative shall indicate items to be salvaged.
 2. Clean salvaged items of dirt and demolition debris.
 3. Store items in secure area until delivery to University.
 4. Provide construction filters for HVAC during entire project. Change all AHU filters at the completion of the project.

3.03 REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by building demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- C. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

END OF SECTION 02221

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.

1.2 DESCRIPTION OF WORK

- A. The work to be done under this heading includes the furnishing of labor, materials, equipment, and service necessary for and reasonably incidental to the proper completion of all mechanical work as shown on the drawings and herein specified.
- B. Visit and examine the job site, and with all authorities concerned in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed for failure to be so informed. Pay all costs and fees for utility connections.
- C. Materials and equipment shall be new, except where otherwise indicated, of the best quality, with same brand of manufacturer for all similar material.
- D. All work shall be performed in a neat and workmanlike manner, and in accordance with all codes, standards, and requirements of the industry.
- E. In general, provide the installation of piping, fittings, equipment, etc.
- F. Regardless of titles and subdivisions herein employed, consider these specifications as one complete document with General Section applying to all other sections. All bidders are cautioned to read entire specifications and to thoroughly familiarize themselves with all requirements thereof.
- G. Check all specifications and all drawings and bring to attention any conflicts or variations as shown as noted.
- H. Specifications and accompanying drawings apply to all contracts or sub-contracts entered into for supplying material or labor for construction of work specified herein and shown on drawings.
- I. Protect University and University Representatives from any and all damages and expense arising from fulfillment of contract and at completion of work repair all damages done.
- J. For any points which are not clear, or for items and/or details which the Contractor feels are in need of clarification, consult the University Representative before submission of a proposal.
- K. The drawings and the specifications are complementary and what is shown and/or called for on one shall be furnished and installed the same as if shown and/or called for in the other.

- L. In case of discrepancies and/or ambiguities in the drawings and/or in the specifications, the University Representative shall be consulted prior to submission of a proposal. Failure to do so on the part of the successful bidder shall be construed as explicit agreement on his part to abide by the University Representative's decision in such matters.
- M. The word "provide" as used in these Specifications and on the Drawings shall be termed to mean "furnish and install".
- N. If the Contractor notices during the bidding any items of the contract documents which will violate any applicable code, these items shall be brought to the attention of the University Representative before the bid date. Failure to bring these items to the attention of the University Representative shall be construed as explicit agreement that the Contractor has included in his bid price any and all modifications necessary to complete the project in accordance with all applicable codes.

1.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Power wiring for all equipment shall be done under ELECTRICAL SECTION 16010.
- C. Piping penetrations through fire rated partitions/floors shall be fire sealed in accordance with the UL fire resistance directory. The integrity of the fire rating, as indicated on the architectural drawings, shall be maintained.

1.4 QUALITY ASSURANCE

- A. The Contractor bidding on this portion of the work must be fully experienced in installations of equal size, complexity, and quality, and must be licensed as a mechanical contractor to perform such work as required by the Louisiana State Legislature, R.S.37:2152-2163.
- B. In bidding he acknowledges that he fully understands the scope of work and design, and has the ability for the contract price to assemble and install the equipment, piping and ductwork shown or specified, so as to mold same into a satisfactory workable system and arrangement.
- C. Contractor shall recognize that a fault or error in his work remains his responsibility regardless of whether such difficulty was discovered after the work had progressed, and shall make corrections at no cost to the Owner.
- D. Adequate and competent constant supervision shall be provided by Contractor to assure that work is done in accordance with good standard practice and workmanship and with intent of drawings and specifications. Contractor shall recognize that amount of information and detail could be provided to contract documents is limitless and could extend into every minute detail and sequence of operations, to a point where only workmen would be required, without drawing on ability, experience and ingenuity of the Contractor.
- E. All work shall be installed in strict accordance, with all existing local and state codes and ordinances, with National Board of Fire Underwriters
- F. This Contractor shall secure all permits and inspections and shall pay all fees and taxes and shall provide University with certificates of approval from agencies having jurisdiction over various phases of work.

- G. Contractor shall maintain and service all equipment until time of acceptance by University. Contractor shall include all required service access in the installation as required by the manufacturer and governing codes.
- H. Prior to starting any work, the Contractor shall submit a quality assurance plan for approval by the University Representative. In the quality assurance plan, the Contractor shall provide the following information:
 - 1. List of all sub-contractors and equipment suppliers.
 - 2. List of all foreman and job superintendents including job experience for all trades.
 - 3. Construction time schedule demonstrating coordination with other trades and showing detailed time lines for test and balance and commissioning being completed prior to final punch list inspection.

1.5 SUBMITTALS

A. Shop Drawings and Submittal Data required:

- 1. Submit to the University Representative for review, complete descriptive information and dimensional data on all items of equipment, materials and accessories, including duct, equipment and sprinkler layouts. Piecemeal submissions shall not be approved. Written approval thereof must be obtained before ordering or installation. The following shall be submitted:

Insulation
Fumehood Controls

Temperature Controls
Lab supply and exhaust valves

- 2. Shop drawings and submittal data shall be considered to be instruments of service only and submitted for the sole purpose of convenience to the Contractor to assist him in the performance of the contract. The University Representative's review of the shop drawings and submittal data shall not supersede these specifications, the accompanying drawings, or the contract terms, unless specifically covered by a properly executed change order, and then only to the extent specifically and explicitly stipulated therein.

- 2. Submit in accordance with requirements of Section 01000.

- B. After completion of project Contractor shall turn over to the University Representative complete operating and maintenance instructions including listing of supply and repair items and locations of places to purchase same.

C. Substitutions:

- 1. All material, equipment, methods, and accessories entering into the work under this section of contract are subject to approval or disapproval of the University. Approval of any manufacturer, material, or product shall not constitute a waiver of University's right to demand full compliance with contract requirements, including shape, size, quality and performance.
- 2. Equality of materials is that established by opinion of University. Decision of University is final.

3. Whenever a material or article of equipment is specified by use of a proprietary name, or by naming the manufacturer or vendor, any material or article which will perform adequately the duties imposed by the design will be considered for substitution, providing it is of equal substance, and function, meets specifications, and is aesthetically acceptable to the University. Refer to Division 1 Sections for approval procedures.
4. Literature, technical data, etc., includes complete data and samples if necessary, with submissions for substitutions. Burden of proof that material offered for substitution is equal, or superior, in construction and efficiency to that named, rests on Contractor, and unless proof is satisfactory to University Representative, substitution will not be approved.

D. See Specifications for "As-Built" requirements.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

Take necessary precautions to protect all material, equipment, apparatus and work from damage. Failure to do so to the satisfaction of the University Representative will be sufficient cause for the rejection of the material, equipment or work in question. Contractor is responsible for the safety and good condition of the materials installed until final acceptance by the University.

1.7 JOB CONDITIONS

- A. Accompanying drawings, including plans, details, diagrams, notes, etc., are shown to limit and explain structural conditions, construction requirements, sizes, capacities and method of installation and erection. Structural and other conditions may require certain modifications and adjustments from conditions shown. Such deviations are permissible; however, specific sizes capacities and requirements affecting the satisfactory performance and operation of the installation shall remain unchanged. Make allowance for normal job conditions and interferences.
- B. Whenever it becomes necessary to shift ducts or pipes or to change shape of ducts, such changes shall be referred to University Representative for approval.
- C. Ask for details whenever uncertain about method of installation. Lack of details not requested shall not excuse improper installation and correction shall be responsibility of Contractor.
- D. Schedule and perform all mechanical work to avoid delays to the Contractor and other trades.
- E. In addition to the basic work covered under this contract, the Contractor shall plan and schedule the work to permit continuous operation of essential services of existing facilities. Planning shall also include scheduling necessary interruptions of service on water lines, drain lines, etc., to existing building at times when such interruptions will cause minimum interference with existing routine and services. All such interruptions shall be made only after consultation with the University. This is extremely important since included in the work is a relocation and rerouting of and connecting to existing facilities, piping, etc. No additional compensation will be allowed for failure to be so informed.

- F. It is essential that all adjacent areas of the school be kept in operation at all times, except when specific permission is given to contrary. Before any lines or equipment are shut down for disconnecting, tie-ins, or rearranging of services, make arrangements with Architect to do this work at night, or Sunday, or at special time of day or year with length of shutdown agreed upon before work is begun. Contractor to bear any overtime or work costs in the connection.
- G. All piping, cleanouts and covers, and other mechanical items in way of construction or remodeling, shall be rerouted, relocated or otherwise adjusted to work out with such construction or changes shown or specified in any or all of various sections of specifications. Unknown piping that is encountered will be referred immediately to University Representative for method of disposition before continuation of work.

1.8 GUARANTEE AND SERVICE

- A. Guarantee all equipment, materials, and workmanship for a period of one (1) year following date of acceptance.
- B. During the period of guarantee any defects in equipment, materials, or workmanship shall be promptly corrected without cost to the University.
- C. Guarantee includes equipment capacity and performance ratings specified without excessive noise levels. Any deficiencies in equipment capacity specified shall be promptly corrected.
- D. Guarantee does not include maintenance items.

PART 2 - PRODUCTS

2.1 TOOLS AND SCAFFOLDING

Furnish all tools, equipment, scaffolding and other facilities required to properly and expeditiously perform the work.

2.2 SIPHON PREVENTORS

Furnish and install on all equipment and fixtures requiring same, backflow preventors or vacuum breakers of a type approved by the Louisiana Health and Human Resources. Water connections to fixtures and equipment shall be made in such a way as to prevent back siphonage when the water supply is out or the pressure drops. Provide reduced pressure type back flow preventors where indicated on drawings or required by Code. They shall be Watts series 900 or Febco Series 825, size as indicated on drawings.

2.3 SLEEVES AND THIMBLES

- A. Pipe sleeves - wrought iron or cast iron of sufficient size for piping and installation to be installed in floors, walls below grade, and grade beams where piping passes through.
- B. Thimbles above grade - heavy galvanized steel of proper size to allow freedom of piping and insulation, set in floor or roof slab as work progresses, also to be installed in wall and partitions where piping passes through.

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- C. Thimbles below grade - same as pipe sleeves above.
- D. Sleeves through floors extend 1/4" above finished floor. Caulk around and seal all piping in chases and piping passing through floor slab.
- E. Provide sleeve seals and shields for all pipe penetrations of ground floor slab.
- F. Provide fire-stopping in all pipe penetrations of rated floors and walls.

2.4 BUCKS, GROUNDS AND CHASES

- A. Be responsible for proper location and sizes or for any errors or omission in placing same.
- B. Failure to inform the General Contractor promptly of such requirements shall not relieve the Mechanical installer of the responsibility for providing a complete mechanical system.

2.5 HANGERS

- A. Horizontal piping above grade without hubs shall be rigidly supported. Distance between pipe supports:
 - 1. 1/2" pipe 6'-0" maximum
 - 2. 3/4" pipe 7'-0" maximum
 - 3. 1" pipe 8'-0" maximum
 - 4. 1 1/4" pipe 9'-0" maximum
 - 5. 1 1/2" pipe and over 10'-0" maximum
- B. Hangers shall be similar to "Split Ring" type.
- C. Metal strap or wire will not be acceptable.
- D. For two or more systems of piping run parallel and with same grade trapeze hangers may be used.
- E. Use #22 gauge galvanized sheet steel saddles between the pipe covering and each pipe hanger on all insulated lines. Saddles shall extend along pipe runs and at least half way up piping on each side.
- F. Rods supporting pipe hangers shall have the following dimensions:

1/2" to 2" pipe	3/8" rod
2-1/2" to 3" pipe	1/2" rod
4" to 5" pipe	5/8" rod
6" pipe	3/4" rod
8" through 12"	7/8" rod

Rods for trapeze hangers shall be a minimum of 3/8" and shall have the equivalent cross section, listed above, per pipe supported.

2.6 PAINTING AND IDENTIFICATION

GENERAL MECHANICAL

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- A. Equipment, including pumps, motors, and similar factory fabricated and assembled units shall be furnished with factory applied protective prime coat paint of finished baked enamel. Equipment surfaces damaged during course of construction or shipment shall be refinished by the Contractor.
- B. Uncoated black ferrous piping and fittings shall be cleaned under this section and painted with one coat of enamel paint under PAINTING SECTION 09900. Color of piping shall be selected by University Representative. Hangers and supports shall be coated by dipping or brush painting with one coat of asphalt varnish. Steel frame equipment supports shall be cleaned and painted with one coat of aluminum paint.
- C. Detached motor controllers, disconnects, etc., shall be identified with metal or plastic plates with etched letters to completely identify service of electrical equipment.
- D. Major control and sectionalizing valves shall be identified by means of etched brass plates bracketed to valve handle. Contractor shall prepare schedule of such identifying plates for University Representative's approval.

PART 3 - EXECUTION

3.1 FLASHING AND COUNTERFLASHING

All pipes and ducts that pass through roof and walls shall run so as not to interfere with the structural system and to permit proper application of base and counterflashing.

3.2 CLEANING, STERILIZING AND PIPING

- A. When all work has been finally tested, Contractor shall clean all pipes and exposed work.
- B. All pipes shall be free from all obstructions.
- C. All plated and other finished products shall be thoroughly cleaned and polished.
- D. All piping shall be installed so that it may expand and contract freely without damages to equipment, other work, or injury to piping system. All necessary swing joints, expansion joints, or offsets to protect piping, etc., shall be installed whether indicated or not. Piping shall be graded to allow for system drainage.
- E. All piping shall be installed and sized as indicated on plans and be of equivalent materials to piping as hereinafter specified.
- F. All piping shall be installed with runs arranged parallels or perpendicular to walls and ceilings with symmetrical and equal spacings between parallel pipes. Offsets shall be made using factory fittings, bending of piping shall not be accepted.
- G. Notify University Representative a minimum 72 hours prior to enclosing piping in concealed spaces so that piping may be inspected.

3.3 TESTING AND INSTRUCTION

GENERAL MECHANICAL

- A. Piping shall be tested to pressure hereinafter specified. Where pressures are not mentioned, it shall be understood that testing to 1-1/2 times service conditions, before insulation is applied, will be acceptable. All tests shall be held for a minimum of 24 hours before inspection.
- B. Furnish all necessary gauges, pumps, test plugs, and temporary connections and shall test sections of the building as work progresses.
- C. All new chilled water piping shall be tested to 150 PSI for a period of four hours.
- D. All tests shall be made in the presence of the University Representative or his representative. Where pipes or connections in new piping are found to leak, they shall be made tight and the tests repeated.

3.4 CUTTING AND PATCHING

Cooperate to the fullest extent with all other trades to reduce to a minimum the amount of cutting and patching of other work necessary for this installation. Do not cut or patch the work of other trades but arrange to provide cutting templates in time, or otherwise pay the respective other contractors for changing theirs, to accommodate this work. No cutting into any structural units likely to impair the strength shall be done without the approval of the University Representative.

3.5 CLEAN UP

Remove debris, surplus and waste materials, oil, grease or stains resulting from the work performed and leave the premises in a broom clean condition AT THE END OF EACH WORKING DAY. All debris, surplus and waste material shall be removed completely from the job site.

3.6 COMMISSIONING

- A. Contractor shall install all items of equipment as identified in this specification in strict accordance with manufacturer's requirements (whether identified in this specification or not), shop drawings and contract documents. Start-up of all equipment shall be by manufacturer authorized representative, unless specific equipment is allowed in writing, by the University Representative, to be started up by the installing Contractor. Start-up services shall be provided for as long a period of time as is necessary to insure proper operation of the equipment items. The start-up technician shall conduct all operating tests as required to insure the equipment is operating in accordance with design parameters. Complete testing of all safety and emergency control devices shall be made. The start-up technician shall submit a written report to the University Representative (prior to final punch list inspection) containing all test data recorded as required above and a letter certifying that the equipment is operating properly.
- B. Other specific items of commissioning shall be as follows:
 - 1. Visually inspect insulation system to verify that insulation is continuous and vapor barrier is complete. Verify there is no condensation or hot spots, correct as required.
 - 2. Thoroughly test all piping systems to insure no leaks are present. Adjust valves, pressure reducing valves, etc., as required by operating characteristics of the system. Set pressures of domestic water systems.

3. Vibration isolation shall be tested by running equipment and checking deflection of spring isolators. Make adjustments as required. No isolator shall be fully compressed.
4. Piping shall be checked to insure direction of flow.
5. Coordinate with section 15950 Contractor to insure mechanical systems operate in accordance with plans and specifications. Heating and cooling modes shall be tested.
6. Ductwork and hydronic piping test and balancing. See Section 15850.
7. Provide written reports for all startup and commissioning tests for University Representative review prior to final punch list inspection.

END OF SECTION 15050

PART 1 GENERAL

1.1 WORK SPECIFIED HEREIN

- A. Furnish all labor, materials, equipment and services necessary for the installation of all insulation as herein described and as indicated on the drawings. The insulation shall be applied by a licensed Insulation Contractor in strict accordance with the best practices of the trade. All insulation material, coverings, adhesive, vapor barriers and tapes shall have a flame spread classification not to exceed 25 and a smoke development not to exceed 50.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Certain items in this specification are listed by manufacturer and/or manufacturer's model number to establish general style, type, character, and quality of the product desired. Similar items manufactured by other than those listed will be considered, providing submittals are made according to Pre-Bid Approval requirements of Instructions to Proposers Article 3.3.
- B. Where no manufacturer or model number is given, any product meeting performance or design criteria, or referenced trade association standard may be used and Pre-Bid Approval is not required.

2.2 DUCT INSULATION

- A. DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA SIZES. See Section 15800 for insulation and duct material and type required for each application. Insulation shall be as per the following:
- B. Lined Duct system - All lined ducts shall be lined with Knauf Duct Liner E-M, Manville Lina-Coustic ductliner, or approved equal. Duct Lining shall be applied in strict accordance with the latest edition of SMACNA's "HVAC Duct Construction Standard Metal & Flexible." Mechanical fasteners shall meet "Standards for Mechanical Fasteners MF-1-1975." Length of mechanical fasteners shall not compress the insulation more than 1/8" and shall be installed perpendicular to the duct surface. Adhesive shall conform to ASTM C 916 and be applied to the sheet metal with a 90% minimum coverage. All exposed edges of the duct liner material shall be coated with the same adhesive. All rips and tears shall also be repaired using adhesive. All internal duct areas shall be covered with duct liner. Transverse joints shall be firmly butted with no gaps, and coated with adhesive. Longitudinal corner joints shall be overlapped and compressed. For velocities from 4001 to 6000 FPM, metal nosing shall be applied to all upstream transverse edges to additionally secure the insulation." Liner shall be 1" thick, 1.5 PCF.

Exterior Duct Wrap - Exterior insulation duct wrap shall be 2" thick .75 PCF fiberglass wrap with F.S.K. jacket, KNAUF duct wrap, or approved equal.

PART 3 EXECUTION

3.1 WORKMANSHIP AND INSTALLATION

- A. All insulation shall be applied per manufacturer's specifications and installation requirements.

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- B. Insulation shall be applied over clean dry surfaces after all test have been performed and approved.
- C. Methods of application and other details not specified herein shall be in accordance with manufacturer's recommendations, which shall constitute minimum standards.

END OF SECTION 15250

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.

1.2 DESCRIPTION OF WORK

- A. The work to be done under this Section includes the furnishing of all labor, tools, materials, equipment and services necessary for and reasonable incidental to the removal and installation of complete mechanical equipment and piping as shown on plans and herein specified, excepting only work and/or materials indicated as being done and/or furnished under other sections.
- B. Contractor shall refer to other Sections of the Specifications which may be applicable to, or associated with this Section.
- C. Contractor shall disconnect and remove the Mechanical equipment as shown on the drawings.
- D. Contractor shall provide complete installation of piping, equipment and installation of all field mounted accessories.
- E. Miscellaneous piping.

1.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Provide and install structural supports for equipment. These supports must be checked and coordinated by this Section so that they suit the equipment which is to be supported.
- B. Provide all platforms slabs, lintels and curbs, as directed by this Section, to accommodate the mechanical equipment.

1.4 QUALITY ASSURANCE

These specifications with accompanying drawings, require complete apparatus, fully erected and in successful operating condition. Perform all work in best, most substantial manner.

1.5 SUBMITTALS

- A. Contractor, before beginning work, shall submit dimensional shop drawings for approval of the installation of all piping systems and equipment layouts.
- B. Where the piping installed is of a different configuration and/or routing than that shown on the drawings, Contractor shall assume all responsibility to conform with the intent of the contract documents. The University Representative shall be advised of any changes and deviations for his approval. The same shall be true for any field modification required because of "on job" construction conditions.

PART 2 PRODUCTS

MECHANICAL SYSTEMS AND PIPING

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2.1 MANUFACTURERS

- A. Certain items in this specification are listed by manufacturer and/or manufacturer's model number to establish general style, type, character, and quality of the product desired. Similar items manufactured by other than those listed will be considered, providing submittals are made according to Pre-Bid Approval requirements of Instructions to Bidders Article 3.3.
- B. Where no manufacturer or model number is given, any product meeting performance or design criteria, or referenced trade association standard may be used and Pre-Bid Approval is not required.

2.2 HVAC DUCTWORK

- A. Provide and install a complete system of ductwork as herein specified to include, but not limit to supply, return, exhaust and fresh air with grilles, registers, diffusers and appurtenance to provide a complete functional and operational system. Duct sizes shown on drawings are free area dimensions. Design shall be as described in the latest edition of SMACNA manuals and as per the following:
 - 1. Galvanized sheet metal shall be lock form quality per ASTM A653 with a G90 zinc coating.
 - 2. Outside air and exhaust air ducts shall be galvanized sheetmetal with air-tight seams and as per applicable sections of SMACNA manuals for low velocity ducts. Insulate outside air and exhaust air ducts with 2" exterior duct wrap as per SECTION 15250.
 - 3. Supply and return ducts for low pressure system and, low velocity systems shall be galvanized sheetmetal with airtight seams and as per applicable section of SMACNA manuals for low velocity ducts. All ducts shall be insulated with 2" exterior wrap as per Section 15250.
 - 4. Rectangular ductwork for medium pressure, high velocity systems shall be galvanized sheetmetal with airtight seams and as per applicable section of SMACNA manuals for high velocity ductwork. Insulate with 2" exterior duct wrap as per Section 15250.
 - 5. Round rigid ductwork shall be all round single wall spiral pipe and fittings, galvanized steel, as per applicable sections of SMACNA manuals for high velocity duct. Insulate with 2" exterior duct wrap as per Section 15250. Seal all seams, joints and wall penetrations with hardcast as herein specified.
 - 6. All ducts shall be sealed per SMACNA Seal Class A. All joints, longitudinal seams and wall penetrations of all supply, return outside air and exhaust ducts shall be sealed with an elastomeric tape which shall consist of a pressure sensitive layer of modified butyl rubber sealer laminated to a foil backing material which shall conform to surface variations and irregular areas and shall not harden crack or peel. The sealant shall be waterproof and shall be a minimum of 15 mils thick. All ductwork shall be cleaned and prepared and sealant shall be applied strictly in accordance with manufacturer's instructions and recommendations. Sealant shall be Hardcast FG-1402, Suretape #653 or approved equal, at Contractor's option flanged gasketed duct system may be used for POSITIVE PRESSURE SYSTEM ONLY.

MECHANICAL SYSTEMS AND PIPING

7. Flexible round duct where indicated on plans shall be listed by Underwriters' Laboratories, Inc., under UL-181 standards as Class I flexible Air Duct Material complying with NFPA Standards 90A. Ducts shall be rated on maximum pressure of 6 inches WG positive and 2 inches WG negative. The duct shall be factory fabricated assembly composed of: an inner duct of woven and coated fiberglass providing an air seal and bonded permanently to corrosion resistant coated steel wire helix: a 2" thick fiberglass insulating blanket and low permeable outer vapor barrier of fiberglass reinforced metalized film laminate. Pressure drop not to exceed .15" SP at 500 Fpm through 6" or larger duct. Maximum length of flexible duct shall not exceed 8'-0". Connect flexible round duct with 1/2" wide nylon positive locking nylon straps on inner duct and outer duct.
 8. Splitter dampers shall be installed where branches take off of main trunk ductwork, where ducts divide or where shown on the drawings. Splitters shall be fitted with nickel plated damper regulators in finished areas. Splitters shall be factory fabricated in accordance with SMACNA Duct Construction Standards.
- B. Flexible connections shall be provided between each fan unit and ductwork on supply side and also on return side. Material shall be flexible fire-resistive material, minimum 4" wide, UL listed, with no metal to metal contact.
- C. Duct supports for rectangular ducts shall be a minimum 1" X 18 gauge galvanized steel bands. Hanger bands shall be bent under lower corners and secured with self-tapping screws at corners and six (6") inch intervals up the sides. Distance between hangers shall be as recommended by SMACNA manual for low and medium ductwork. Ductwork shall be rigidly supported to prevent vibration. Duct attachments to structure, lower hanger attachments, ducts traps and rods and trapeze angles shall be in accordance with SMACNA Low Pressure and High Pressure Duct Standards.
- D. Where the ducts pass through walls, draftstops or partitions, the space shall be packed with non-combustible materials, filling all voids around duct.
- E. Fire dampers with fusible links shall be installed at all points in ductwork where indicated on drawings, and/or as required by NFPA, 90-A, AND MECHANICAL CODE OF THE IBC.
- F. Provide radius elbows unless specifically indicated otherwise or space prohibitive. Rectangular radius elbows shall be factory fabricated with a centerline radius of not less than the width of the duct. Round duct elbows shall have a minimum center line radius of 1-1/2 times the diameter of the duct and shall be smooth where possible. Provide square elbows where indicated or space prohibits the use of radius elbows. Square elbows shall be factory fabricated with double thickness airfoil turning vanes pre-assembled and securely attached to runners.
- G. In general, vertical risers and other duct runs, where the method of support specified above is not applicable, or not specifically detailed on drawings, shall be supported by substantial angle brackets designed to meet field conditions, installed to allow for duct expansion and approved by Architect.
- H. Provide exposed operators for operation of dampers and splitters in inaccessible ceilings, operators shall be chrome plated.

- I. Maximum duct leakage shall be +/- 5%, SMACNA Seal Class A. Ductwork shall be designed for 4.0" static pressure. Outside air, return air and exhaust air systems shall be designed for 4.0" static pressure. Construct ductwork in accordance with SMACNA Duct Construction Standards for the specified pressure class.
- J. Install Automatic dampers, airflow stations and other duct mounted devices required by Section 15950.
- L. Flanged gasketed exhaust and return ductwork will not be accepted.
- K. Duct heating coil cleaning shall be as follows:
 - 1. Vacuum existing heating coil.
 - 2. Spray coil with coil cleaner.
 - 3. Rinse coil.
 - 4. Vacuum coil a second time.
 - 5. Protect existing ductwork and all areas below where the work is performed.

PART 3 EXECUTION

3.1 INSTALLATION

- A. All piping and equipment shall be installed in accordance with manufacturer's recommendations. Installation, adjustments and starting shall be done under supervision of manufacturer's representative.
- B. All piping and valves shall be installed in a neat and workmanlike manner in accordance with the guidelines and the best practice of the trade.
- C. Upon completion of the installation of all work and equipment the Contractor shall coordinate with the University in the starting of all equipment and make all necessary tests and adjustments to place the piping systems in a satisfactory condition for continuous safe operation of facilities.

END OF SECTION 15800

SECTION 15850 – TESTING AND BALANCING OF AIR SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Contractor shall furnish all labor, equipment and services necessary for and incidental to Air Systems Testing and Balancing.
- B. The Contractor shall procure the services of an independent testing and balancing agency. The Testing and Balancing Agency (TBA) specializes in testing and balancing of heating, ventilating, air-moving equipment, air-conditioning system and Hydronic systems. The Contractor shall award the test and balance contract to the above agency as soon as possible after receipt of contract.
- C. Testing and Balancing shall not begin until the systems have been completed and are in full working order.
- D. Shop drawings must be provided to the TAB firm no later than 30 days after the final, approved shop drawings have been returned by the University Representative.
- E. The final and complete Test and Balance Report shall be submitted, for approval, not less than two weeks before a final inspection of the Project is requested by the General Contractor. Failure to provide the Report shall be cause to delay the final inspection until the Report is Approved .
- F. Contractor is cautioned that test and Balance Report shall include both Grille counts, and Supply, Return, Outside Air and Exhaust Duct Traverses so that duct leakage can be calculated.

1.2 REFERENCES

- A. AABC – National Standards for Total System Balance.
- B. NEBB – Procedural Standards for Testing, Adjusting, and Balancing.

1.3 SUBMITTALS

- A. Field Reports: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
- B. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for University Representative and for inclusion in operating and maintenance manuals.

TESTING AND BALANCING OF AIR SYSTEMS

- C. Provide reports in soft cover, letter size, binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating, thermostat locations.

1.4 QUALITY ASSURANCE

Perform total system balance in accordance with AABC National Standards for Field Measurement and Instrumentation, Total System Balance or NEBB Standards – Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems or Testing Adjusting and Balancing Bureau (TABB)-National Standards for Environmental Systems Balance.

1.5 QUALIFICATIONS

TBA shall be a Company specializing in the testing, adjusting, and balancing of systems specified in this Section with minimum three years experience.

PART 2 - PRODUCTS

2.1 ADJUSTMENT DEVICES

Replacement of adjustable pulleys, additional balancing dampers, additional fan belts, pressure taps and fitting, hydronic balancing valves and any other devices or equipment required to effect proper testing, adjusting and balancing shall be provided by the Contractor at no additional cost to the University.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
 - 1. Systems are started and operating in a safe and normal condition.
 - 2. Temperature control systems are installed complete and operable.
 - 3. Proper thermal overload protection is in place for electrical equipment.
 - 4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
 - 5. Duct systems are clean of debris.
 - 6. Fans are rotating correctly.

7. Fire and volume dampers are in place and open.
 8. Air coil fins are cleaned and combed.
 9. Access doors are closed and duct end caps are in place.
 10. Air outlets are installed and connected.
 11. Duct system leakage is minimized.
- B. Beginning of work means acceptance of existing HVAC conditions.

3.2 INSTALLATION TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 5 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets; Adjust total to within plus 5 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 5 percent of design.

3.3 ADJUSTING – GENERAL

- A. Ensure recorded data represents actual measured or observed conditions.
- B. Permanently mark setting of valves, dampers, and other adjustment devices allowing setting to be restored. Set and lock memory stops.
- C. After adjustment, take measurement to verify balance has not been disrupted or that such disruption has been rectified.
- D. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- E. At the time of final inspection the TAB agency may be required to recheck, in the presence of the University's Representative, specific and random selections of data, air quantities, and air motion recorded in the certified report. Points and areas for recheck shall be selected by the University Representative. Measurements and test procedures shall be the same as approved for the initial work for the certified report. Selections for recheck, specific plus random, shall not exceed 10% of the total number tabulated in the report.

3.4 AIR SYSTEMS PROCEDURE (MINIMUM REQUIREMENTS)

- A. Test and adjust fan RPM to design requirements.
- B. Test and record motor full load nameplate rating and actual ampere draw.
- C. Test and record system static pressures, fan suction and discharge.
- D. Adjust all main supply and return air duct to proper design CFM.

- E. Test and adjust each diffuser, grille and register (new and existing as indicated on drawings). Reading and tests of diffusers, grilles and registers shall include design velocity (FPM) and as adjusted velocity, design CFM and adjusted CFM.
- F. Test and record outside, mixed air and discharge temperatures (D.B. for heating cycle, D.B. and W.B. for cooling cycle).
- G. In coordination with the ATC contractor, set adjustments of automatically operated dampers to operate as specified, indicated and/or noted.
- H. Test and adjust air handling and distribution systems to provide required or design supply, return, outside and exhaust air quantities.
- I. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- J. Measure air quantities at air inlets and outlets.
- K. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- L. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- M. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.
- N. Provide system schematic with required and actual air quantities recorded at each outlet or inlet
- O. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- P. Adjust outside air automatic dampers, outside air, return air and exhaust dampers for design conditions.
- Q. Measure temperature conditions across air, return air, and exhaust dampers to check leakage.
- R. Where modulating dampers are provided, take measurement and balance at extreme conditions.
- S. Measure and record pressure differentials between designated spaces.

3.5 LABORATORY HOOD PROCEDURE

- 1. Adjust fans to deliver total indicated air flows.
- 2. Measure and adjust exhaust airflow and static pressures.

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3. Make measurements of face velocities at multiple points, no more than 12 inches, across open sash area.
4. Verify that hood average face velocity complies with Contract Documents and manufacturer's recommendations.
5. Measure and adjust make-up airflow and static pressures for each system, where applicable.
6. Check the fume hood for smoke capture and containment using a smoke-emitting device.
7. Observe smoke pattern and make adjustments to room airflow patterns to achieve optimum results.

3.6 REQUIRED REPORTS TO BE SUBMITTED

The following reports shall be submitted, as a minimum, with a complete Title Page, Summary , and Instrument List. All data and nomenclature shall be provided, as required by AABC and/or NEBB Procedure manuals, for each device tested and balanced.

1. Lab supply and exhaust valves.

All existing fumehoods, room general exhaust, and supply valves shown on ME-1 to be replaced shall be tested and balanced.

3.7 COMMISSIONING

- A. Balancing Agency shall coordinate with the Contractor the Commissioning requirements as here-in-before specified.
- B. Contractor is cautioned that the University, thru the University Representative, reserves the right to check and verify any and all points and readings of the Test and Balance report. If 15% or more of the points do not agree with the report, then the Contractor shall re-test and re-balance the entire project and submit a complete new Report. If 15% or more of this new Data is independently verified and still does not agree with the Contractor's new Report, then the Owner has the right to hire an Independent Test and Balance Contractor and the Original Contractor shall be held responsible to pay these costs.
- C. All TAB deficiencies shall be corrected when found. Any deficiencies that are (for whatever reason) not corrected immediately shall be shown in the TAB report and listed on a summary sheet in the front of the TAB report. The TAB report must be completed and accepted by the University Representative before the project is accepted and all items on the summary sheet shall become punch list items with dollar values assigned to them.

END OF SECTION 15850

SECTION 15900 – VALVES AND FITTINGS

PART 1 – GENERAL

1.1 SUMMARY

The work under this heading includes the furnishing and installing of all required appurtenances incidental to the piping systems as indicated on the drawings. Refer to GENERAL MECHANICAL REQUIREMENTS Section 15050 which shall apply to all work in this Section.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide factory-fabricated valves for use in service indicated. Provide valves of types and pressure ratings indicated; provide proper selection to comply with installation requirements. Provide sizes as indicated, and connections, which properly mate with pipe, tube, and equipment connections. Where more than one type is indicated, selection is installer's option. Valves shall be of same make for all these services.
- B. Valves shall comply with the following:
 - Gate - cast iron - MSS SP-70
 - Gate - bronze - MSS SP-80
 - Globe - cast iron -MSS SP-85
 - Globe - bronze - MSS SP-80
 - Ball - MSS SP-110
 - Butterfly - MSS SP-67
 - Check - cast iron - MSS SP-71
 - Check - bronze - MSS SP-80
- C. Gate valves shall be equipped with packing suitable for intended service. (Under no circumstances is asbestos acceptable.) Valves shall be designed so back seating protects packing and stem threads from media when valve is fully opened, and equipped with gland follower. Guides for disc on rising stem valves shall be machined for accurate fit.
- D. Globe valves shall be equipped with packing suitable for intended service. (Under no circumstances is asbestos acceptable.) Globe valves shall be designed so back seating protects packing and stem threads from media when valve is fully opened, and equipped with gland follower.
- E. Ball valves shall have FULL port opening blow out proof stem: hard chrome plated forged brass ball, rated not less than 600# W.O.G.
- F. Provide gear operators on butterfly valves 8" and larger. Valve bodies shall have extended necks to provide for 2-1/4" insulation.
- G. Provide valves with features indicated and where not otherwise indicated, provide proper valve features as outlined in this specification. Comply with ANSI B31.1.

VALVES AND FITTINGS

- H. Valve flanges shall comply to ANSI B16.1 (cast iron), ANSI B16.5(steel), ANSI B16.24 (bronze).
- I. Threaded valve ends shall comply with ANSI B2.1.
- J. Butt-Weld valve ends shall comply with ANSI B16.25.
- K. Solder Joint valve ends shall comply with ANSI B16.18.
- L. Flangeless valve bodies shall be manufactured to fit between flanges and shall comply with ANSI B16.1 (cast iron), ANSI B16.5 (steel), or ANSI B16.24 (bronze).
- M. Fabricate pressure-containing components of valves, including stems and seats from brass or bronze materials, of standard alloy recognized in valve manufacturing that resist de-zincification.
- N. Design seat of valve with removable disc, and assemble valve so disc can be replaced when worn.
- O. Butterfly valves shall be designed for flow regulation, and manufactured to be tight in closed position. Test pressures in accordance with MSS SP-67 as follows: Seat 2-12" 220psi. No leakage shall be permitted under test.

2.2 BALL VALVES

- A. Threaded Ends 3" and Smaller: 600# W.O.G., forged brass two piece body, hard chrome plated forged brass ball, blow-out proof stem.
- B. Soldered Ends 2" and Smaller: 600# W.O.G., forged brass two piece body, hard chrome plated forged brass ball, true adjustable packing nut ("O"-ring only type stem seal not acceptable), blow-out proof stem..
- C. Flanged Ends 2-1/2" and larger: Class 150, flanged ends, carbon steel body with 316 s.s. trim, uni-body design, full port, blowout proof s.s. stem and ball, teflon seat.

2.3 BUTTERFLY VALVES

- A. For chilled/hot water system provide lug type with rated working pressure of 200 psi on sizes 2" thru 12". Valve shall be cast iron, drilled and tapped bug body, lever operated, 10 position throttling handle, memory plate, type 410 stainless steel stem with EPDM seat.

2.4 SWING CHECK VALVES IN STEEL PIPING

- A. Threaded Ends 2" and Smaller: Class 125, bronze body, screwed cap, "Y" pattern swing, Teflon disc.
- B. Flanged Ends 2-1/2" and Larger: Class 125, iron, bronze mounted, horizontal swing, cast-iron disc.

2.5 UNIONS IN COPPER LINES

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Cast Bronze Unions.

2.6 UNIONS IN BLACK STEEL, WROUGHT IRON OR GALVANIZED STEEL PIPING

Ground joint malleable iron galvanized Class 300 for 2" nominal pipe sizes or below. For pipe sizes 2-1/2" and larger use forged steel welding flanges (Galvanized for galvanized piping).

2.7 UNIONS IN CONNECTION BETWEEN COPPER AND STEEL OR IRON PIPING

Provide bronze valves or dielectric waterways.

2.8 STRAINERS

Through 2-1/2" Metraflex Style S - Screwed; Zurn Model YSBR 20 mesh monel screen through 2"; .045 stainless steel on 2-1/2"; Strainers on 3" and above Metraflex Style M1 - flanged; Zurn Model FS 3" to have .045 mesh, ss screws; 3-1/2" and above .125 mesh, ss screws.

2.9 GAGE COCK

Crane No. 744, or Weiss TC-14, all bronze.

2.10 AIR VENT

Automatic air vents where indicated on drawings shall be Bell & Gossett No. 7, or Taco 417, with copper discharge line piped to closet floor drain.

2.11 MANUAL AIR VENTS

Where installed shall be Crane No. 744, or Weiss TC-14, with 1/4" tap into line to be vented.

2.12 GAUGES

Furnish and install where shown on the plans or where good practice required, pressure gauges with 4-1/2 glass dial face, corrosion resistant stainless steel case and ring, balanced adjustable black pointer guaranteed accurate to 1% of range, easy read dial - white background with bold black numerals and graduations, 270 degree ARG, 1/4" N.P.T. bottom connection.

2.13 THERMOMETERS

Shall be Adjustable Angle type with 9" case, lens front reading mercury tube, with angle satin finish aluminum scales, bold black numerals, bold scale graduations, thick glass windows, and die cast aluminum case with baked bronze finish. Thermometer shall rotate 180 degrees and stem swivels 180 degrees in 10 degree increments separable wells to suit insulation. For chilled water 20 degrees to 120 degrees. For hot water 30 degrees to 240 degrees.

2.14 T.A.P. PLUGS

Furnish where shown on plans or where good practice requires 1/2" IPS plug. The Contractor shall leave with the University one kit consisting of (1) 1/8" thermometer, (1) pressure gauge and (1) gauge adaptor, 1/8" diameter with stainless steel probe, 1/4" FPT gauge connection.

VALVES AND FITTINGS

2.15 BALANCING VALVES

Valves ½" to 2" pipe size (NPT or Sweat) to be of dezincification brass or bronze construction. Valves 2-1/2" to 12" pipe size shall be cast iron for flanged models or ductile iron for grooved models. Valves shall be globe type rated 175 psi for iron and 240 psi for brass/bronze at 250 degrees F. Valves to have concealed memory stop feature and visual position readout. Each valve shall have two metering/test ports with internal check valves and protective caps. Valves to be leak-tight at full rated working pressure. All valves to be provided with molded insulation to permit access for balance and read-out. Nibco model T or S1710 (1/2" to 2"), F or G737 (2-1/2" to 12"), DeZurik series 12.30-1 or approved equal.

2.16 GASKETS

Material shall be of compressed sheet suitable for the operating conditions. Group 1a or 1b as listed in ASTM B16.5.

2.17 BOLTS AND NUTS

Bolts shall conform to ASTM A193/A193M Rev B, Grade B7, nuts shall conform to ASTM A194/A194M Rev A, Grade 2H.

PART 3 EXECUTION

3.1 WORKMANSHIP AND INCIDENTAL ITEMS

- A. All valves shall be installed so as to be easily accessible for cleaning, inspection, maintenance, and operation.
- B. Install valves with stems pointed up, in vertical position where possible, but in no case with stems pointed downward for horizontal plane unless unavoidable. Provide chain operators on all valves over 6' above floor in mechanical rooms.
- C. Except as otherwise indicated, install valves with the following ends or types of pipe/tube connections:
 - Tube Size 2" and smaller - Soldered-joint valves
 - Pipe Size 2" and smaller - Threaded valves
 - Pipe Size 2-1/2" and larger - Butt-weld end valves or
Flanged end valves
- D. Install swing check valves in horizontal position, unless otherwise shown on drawings, with hinge pin horizontally perpendicular to centerline of pipe. Install for proper direction of flow.
- E. Provide access panels at all concealed valves.
- F. Major control and sectionalizing valves throughout building shall be identified by means of a brass valve tag bracketed to valve handle. Contractor shall prepare schedule of such identifying plates and frame under glass for installation in main equipment room.
- G. All welded piping to be welded by certified welders skilled in the work to be done.

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- H. No piping of dissimilar metals placed in contact or in close proximity with each other. Provide dielectric waterways wherever piping of dissimilar metals is joined.
- I. Run all piping concealed unless specifically noted otherwise, making all necessary offsets, turns, etc., necessary to conceal piping from view.
- J. Provide all necessary steel frame supports, anchor bolts, sleeves, etc., required for safe support of equipment and piping installed under this contract. The Contractor shall be completely responsible for the accurate position and dimensions of all foundations and support items.

END OF SECTION 15900

SECTION 15950 – TEMPERATURE CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A Critical Spaces Control Platform (CSCP) for controlling airflow, comfort control, and zone balance while maintaining energy efficiency and minimal maintenance shall be furnished and installed under this section. The CSCP shall be capable of operating as a standalone system or as a system integrated with the Building Management System (BMS) or Building Automation System (BAS).

1.02 REFERENCES

- A. Abbreviations and Acronyms
 - ACM: Actuator Control Module
 - ANSI: American National Standards Institute
 - ARI: Air-Conditioning and Refrigeration Institute
 - ASHRAE: American Society of Heating, Refrigeration, and Air-Conditioning Engineers
 - ATC: Advanced Temperature Control
 - BACnet: Building Automation and Controls Network
 - BAS: Building Automation System
 - BMS: Building Management System
 - CSCP: Critical Spaces Control Platform
 - CVV: Constant Volume Venturi Valve
 - HCAI: Department of Health Care Access and Information
 - NVLAP: National Voluntary Lab Accreditation Program
 - PBC: Programmable BACnet controller
 - PIN: Personal Identification Number
 - ROHS: Restriction of Hazardous Substances Directive
 - TTW: Through The Wall (sensor)
 - UBC: Usage Based Controls
 - UIO: Universal Input/Output
 - VAV: Variable Air Volume
 - ZPS: Zone Presence Sensor
- B. Reference Standards
 - 1. Air-Conditioning and Refrigeration Institute
 - ARI 880 Performance Rating of Air Terminals
 - 2. American Society of Heating, Refrigeration, and Air-Conditioning Engineers / American National Standards Institute
 - ASHRAE/ANSI Standard 130, Methods for Testing Air Terminal Units
 - 3. American National Standards Institute / American Society of Heating, Refrigeration, and Air-Conditioning Engineers ANSI/ASHRAE 135-2016: BACnet® - A Data Communication Protocol for Building Automation Systems (including Standard and all published Addenda)

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination
 - The CSCP system representative shall coordinate all details of the installation with the successful mechanical contractor. This effort shall include complete coordination of the

sheet metal layout drawings to assure that the ductwork layout and sizing is based on the actual sizes of the airflow control valves and other components for this project.

B. Pre-installation Meetings

1. The CSCP system representative shall review the proper installation of the system with the sheet metal contractor and the building management system (BMS) contractor.
2. Project Installation Phase – The CSCP representative shall make periodic visits to the project jobsite to assure that the system is being installed properly to assure optimal performance and that the location and orientation of the control valves is consistent for proper operation and future owner maintenance. Any discrepancies shall first be brought to the attention of the appropriate subcontractor. If no action is taken by said contractor, the representative shall bring these issues to the project manager, engineer or owner's representative for resolution.

1.04 SUBMITTALS

- A. General: Submit listed Submittals in accordance with Conditions of the General Contract and Division 1 Submittal Procedures Section. CSCP submittals shall contain, at a minimum, the following information:
1. Product Data Sheets
 2. Guide Specifications for individual products
 3. Installation guides for all equipment
 4. Equipment Schedule Sheets containing Room#, Tag#, Min/Max flows, Catalog# and other configuration data as required to provide a fully engineered CSCP.
 5. Project-specific Wiring Diagrams
 6. Points Lists for integration to the BAS/BMS

1.05 CLOSEOUT SUBMITTALS

- A. Operation and maintenance manuals, including as-built wiring diagrams and component lists, shall be provided as closeout submittals.
- B. Integration checklists are encouraged; once the integration to the BMS or BAS is completed, it is recommended that the Phoenix Controls Representative Partner meet with the BMS or BAS contractor to do a final acceptance test of the integration. This testing should include:
1. Testing points to ensure communication
 2. Testing setpoints such as temperature, occupancy, room offset, etc.
 3. Testing various alarms in different parts of the system
 4. Testing to ensure that equipment will operate and cycle properly after a power loss

1.06 QUALITY ASSURANCE

A. Certifications

1. The laboratory airflow system provider shall be an entity that designs, develops, manufactures and sells products and services to control the environment and airflow of critical spaces using a Quality Management System registered to ISO 9001:2015.
2. The Critical Spaces airflow Control platform provider shall be RoHS compliant in all its products.
3. The Venturi valves shall be calibrated on NVLAP accredited air stations. NVLAP Accreditation (Lab Code 200992-0).

- a. Each airflow control device shall be factory characterized on air stations NVLAP Accredited (a program administered by NIST) to ISO/IEC 17025:2015 standards.
 - b. Each airflow control device shall be factory characterized to the job specific airflows as detailed on the plans and specifications using NVLAP Accredited air stations and instrumentation having a combined uncertainty of no more than $\pm 1.4\%$ of signal (4,200 to 250cfm), $\pm 2.5\%$ of signal (249 to 100cfm) and $\pm 4\%$ of signal (199 to 35cfm). Electronic airflow control devices shall be further characterized and their accuracy verified to $\pm 5\%$ of signal at a minimum of 48 different airflows across the full operating range of the device.
 - c. Each airflow control device shall be marked with device-specific factory characterization data. At a minimum, it should include the room number, tag number, serial number, model number, eight-point characterization information (for electronic devices), date of manufacture and quality control inspection numbers. All information shall be stored by the manufacturer for use with as-built documentation. Characterization data shall be stored indefinitely by the manufacturer and backed up off site for catastrophic event recovery. If requested, characterization data will be provided to the customer (fees may apply).
4. The Venturi valves shall be HCAI (formerly OSHPD) Certified to Preapproval per 2013 CBC, 2012 IBC, ASCE 7-10, and IEC-ES-AC-156. HCAI Special Certification number OSP-0290.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Storage and Handling Requirements

1. Prior to installation, the CSCP products shall be stored in dry conditions within an environment complying with CSCP product specifications as shown on product data sheets within the submittals.
2. The CSCP products shall be handled and transported in a manner consistent trade practices for control systems and instruments.

1.08 SITE CONDITIONS

The ambient environmental conditions during installation and operation shall comply with CSCP product specifications as shown on the product data sheets within the submittals.

1.09 WARRANTY

The Warranty shall commence upon the date of shipment and extend for a period of 60 months for all airflow control devices and 36 months for all other control system components.

1.10 Ownership of Proprietary Material

- A. Project-specific software and documentation shall become University's property. This includes, but is not limited to:
 1. Graphics
 2. Record drawings
 3. Database
 4. Application programming code

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5. Documentation

PART 2 - PRODUCTS AND COMPONENTS

2.01 CRITICAL SPACES CONTROL PLATFORM

A CSCP system shall be furnished and installed to control the airflow and comfort control into and out of critical spaces. The exhaust air, and supply air flow rates shall be controlled precisely by Venturi Air Valves to maintain a constant setpoint of each individual airflow control device, work together as a system to maintain pressurization and volumetric offset control, and each device shall accurately move to a new commanded position when desired without overshooting the setpoint, undershooting the setpoint, or hunting when in steady state control. When used with fume hoods, the face velocity into the fume hood at either a standard/in-use or standby level based on an operator's presence in front of the fume hood shall be achieved within one second of receiving a command change and will maintain setpoint without hunting. The CSCP system shall vary the amount of make-up/supply air into the rooms to operate at the lowest possible airflow rates necessary to maintain temperature control, achieve minimum ventilation rates and maintain pressurization in relation to adjacent spaces (positive or negative). The CSCP shall be capable of operating as a standalone system or as a system integrated with the Building Management System (BMS). An optional locally mounted user interface terminal shall be available to allow room-level control variables to be displayed, and where appropriate, edited to adjust control operation.

2.02 COMPONENTS

A. Venturi air valves and controllers

Venturi Valves: For airflow control within the CSCP system, Venturi Air Valves provided by Phoenix Controls shall be used.

- a. General: Phoenix Controls Venturi Air valves are Mechanically pressure independent and require a minimum of 0.6 in wc for medium pressure in order to achieve full turndown and rated +/-5% accuracy at all flow setpoints within the specifications of each size valve. Venturi Air Valves will remain accurate throughout their controlled pressure range of 0.6 in wc to 3.0 in wc. Phoenix Controls Venturi valves are inlet and exit insensitive and do not require straight duct before or after the valves in order to properly operate. Venturi Air Valves have no required scheduled maintenance. All components are designed to operate trouble free with no regular maintenance required. Venturi valves shall have turndown ratios up to 20:1 depending on valve size. Venturi valves shall mechanically respond instantaneously to changes in duct static pressure. For High speed actuation valves shall be capable of achieving the intended setpoint with no more than 5% overshoot/undershoot within 1 second, and shall achieve full stroke (full open to shutoff or vice versa) within 3 seconds.
- b. The airflow control device shall be mechanically pressure independent over its specified differential static pressure operating range. An integral pressure independent assembly shall respond and maintain specific airflow within one second of a change in duct static pressure irrespective of the magnitude of pressure and/or flow change (within product specifications) or quantity of airflow controllers on a manifolded system.

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- B. Airflow control devices that are not venturi valves and are airflow measuring devices (e.g., pitot tube, flow cross, air bar, orifice ring, vortex shedder, etc.) shall only be acceptable, provided these meet all the performance and construction characteristics as stated throughout this specification and:
- a. The airflow control device employs transducers manufactured by Rosemount, Bailey, Bristol, or Foxboro. Accuracy shall be no less than $\pm 0.15\%$ of span (to equal $\pm 5\%$ of signal with a 15 to 1 turndown) over the appropriate full-scale range, including the combined effects of nonlinearity, hysteresis, repeatability, drift over a one-year period, and temperature effect. 316L stainless steel materials shall be provided for all exhaust applications. The use of 304 stainless steel or aluminum materials shall be provided for all supply air applications.
 - b. Airflow sensors shall be of a multi-point averaging type, 304 stainless steel for all supply and general exhaust applications, 316L stainless steel for all fume hood, canopy, snorkel, and biosafety cabinet applications. Single point sensors are not acceptable.
 - c. Suppliers of airflow control devices or airflow measuring devices requiring minimum duct diameters shall provide revised duct layouts showing the required straight duct runs upstream and downstream of these devices. Coordination drawings reflecting these changes shall be submitted by the supplier of CSCP. In addition, suppliers shall include static pressure loss calculations as part of their submittals. All costs to modify the ductwork, increase fan sizes and horsepower and all associated electrical changes shall be carried by the airflow control device supplier.
 - d. Suppliers of airflow control devices that utilize measurement tools (closed loop venturi type, vortex shedder type, flow cross type, orifice ring type, or flow station type) shall provide a minimum required differential pressure rating of all their devices when in control at min and max flows. ASHRAE 130 is not an acceptable method of minimum operating pressure and values generated from ASHRAE 130 testing shall not be accepted as a basis for minimum operating pressure when airflow control device in control.
 - e. Suppliers of airflow control devices that utilize measurement tools (closed loop venturi type, vortex shedder type, flow cross type, orifice ring type, or flow station type) shall provide a recommended interval for cleaning and recalibrating flow measurement sensors including but not limited to vortex shedding devices, and pressure transducers. Transducer drift shall be included in this recalibration interval by manufacturer. Any device using a pressure transducer shall have the accuracy and drift of the pressure transducer in writing in the submittal.
- C. Valve Body Construction:
- i. Class A—The airflow control device for non-corrosive airstreams, such as supply and general exhaust
 - ii. Class B—The airflow control device for corrosive airstreams, such as fume hoods and biosafety cabinets
 - iii. Class C—The airflow control device for highly corrosive airstreams
 - iv. Class D—The airflow control device for extremely corrosive airstreams
- a. Valve Body Design – Valves shall be orderable in standard non shut-off valve body (type A), Standard Shut-off (type S), and low-leakage Shut-off (type L).

- b. Variable Air Volume (VAV): Variable air volume venturi valves shall have the capability to dynamically be controlled to any position between min and max specified flows and to shutoff as required. Standard speed actuation (45-90 seconds full stroke) or High Speed actuation (<1 second response to command change).
- D. Actuator Control Module (ACM) with optional Fail-Safe Module (FSM): The Actuator Control Module is a digital controller that is used on the Venturi Air Valve when High-Speed actuation is required. The Actuator control Module shall house the flow curve characteristics and shall receive a command from the Programmable BACnet Controller for CSCP controlled systems, from BACnet MS/TP for open BAS/BMS command, or from an analog input for analog control of the Venturi Valve. The Actuator Control Module shall have 2 programmable universal input/outputs (UIO) that can be used for Sash Sensor and Zone Presence Sensor when used with a fume hood, or can be used as network UIO when not used for a fume hood. The Fail-Safe Module (FSM) is a plug-and-play optional capacitor bank that will drive the valve position to a pre-programmed position on power failure and will allow the ACM to perform a "soft shut down" on power failure.
- E. Programmable BACnet Controller (PBC): The Programmable BACnet Controller (PBC) can be mounted on a Venturi valve or in a panel on standard DIN rail or with self-tapping screws and serves three basic functions within the CSCP system:
 - a. Zone controller for High speed valves – Handles zone balance, offset control, comfort control, emergency control, occupancy control, air quality monitoring, demand based ventilation, and offers programmable IO for additional functions for up to 20 high speed venturi valves and 10 fume hood controllers in a single zone.
- F. Fume Hood Controls
 - 1. Fume Hood Display (FHD500): For fume hoods, vented cabinets, and two-state cabinets, a Fume Hood Display shall be provided in order to provide the operator an indication of the performance and operation of the fume hood and attached airflow control devices.
 - a. Phoenix Controls Fume Hood Display 500 series (FHD500) is designed and tested to be used in conjunction with the Phoenix Controls Critical Spaces Control Platform (CSCP) when used with Actuator Control Modules (ACM) mounted on a Phoenix Controls Venturi valve, with Sash sensors (Vertical, Horizontal, or combination), with a standalone Phoenix Controls Constant Volume Valve (CVV), with a standalone Phoenix Controls two state (2-state) valve, or with Analog fume hood fan drive units also known as Drives.
 - b. General Monitor
 - i. 4" color LCD capacitive touch screen display (480 x 480 pixels) WVGA.
 - ii. Touch-screen pane shall have variable brightness adjustment to accommodate various lighting conditions
 - iii. "Buttons" on face of monitor for:
 - i. Muting alarms
 - ii. Emergency Exhaust Override
 - c. The Fume Hood Display shall be able to support applications for constant volume (CVV), Two State (2-State), Drive applications, and High Speed Variable Air Volume (VAV)
 - d. When Used with High Speed VAV applications, Fume Hood Display shall support the one second speed of response of the Phoenix Controls Fume Hood Venturi valve

- e. Fume Hood Display shall be able to support Vertical Sash Setup, Horizontal Sash Setup, or Combination Sash Setup (multiple vertical and horizontal sash sensors)
 - f. The Fume Hood Display must be able to connect to:
 - i. Phoenix Controls Valves via Pressure switch (CVV applications)
 - ii. Phoenix Controls Valves via Sash Switch (2-State applications)
 - iii. Phoenix Controls Valves via BACnet MS/TP to an Actuator Control Module (ACM) for fully-functional High-speed VAV applications
 - iv. Analog signal for Drive applications
 - g. The Fume Hood Display shall display current fume hood conditions or status depending on application
 - h. The Fume Hood Display shall have a status screen that gives indications of:
 - i. Current fume hood conditions
 - ii. Selectable display for Face Velocity, CFM, or status (Normal / Alarm)
 - iii. User Presence Status
 - iv. Hood Status (Normal/Alarm)
 - v. Alarm messages to alert users of potential cause of alarms
 - vi. Hood energy waste indicator alerts
 - vii. Night energy waste alerts
 - viii. Hood hibernation mode
 - ix. Sash Open percentage
 - i. The touch screen shall support input configurations for fume hood operational parameters done at the touch panel
 - j. Alarm and Warning Set points shall be viewable and editable from the menu on the display.
 - k. Audible Alarm is included for Alarm and Warning conditions
2. Sash Sensors: For variable air volume (VAV) systems, a sash sensor shall be provided to measure the height of each vertically moving fume hood sash. A sash sensor shall also be provided to measure the opening of horizontal overlapping sashes. For hoods that have both vertical and horizontal sashes, a combination sash sensor shall be provided to scale the signal from the combination sash, and a digital interface card shall be provided to allow proper scaling and control of both vertical and horizontal sashes. Control systems employing sidewall-mounted or through the wall (TTW) velocity sensors to control the fume hood exhaust airflow shall be unacceptable. Sidewall-mounted or through the wall (TTW) sensors shall only be used as a reference or to provide a secondary alarm indication relative to operating face velocity. Sash sensors are provided so that the airflow at the fume hood shall vary in a linear manner between two adjustable minimum and maximum flow set points to maintain a constant face velocity throughout this range. A minimum volume flow shall be set to assure flow through the fume hood even with the sash fully closed.
3. `Zone Presence Sensor: A Zone Presence Sensor (ZPS) shall be provided to determine an operator's presence in front of a hood by detecting the presence and/or motion of an operator, and to command the CSCP venturi hood valve from an in-use operating face velocity (e.g., 100 fpm) to a standby face velocity (e.g., 60 fpm) and vice versa.
- a. The sensor shall define an adjustable detection zone that extends approximately 20 inches (50 cm) from the front of the fume hood. If the sensor

does not detect presence and/or motion in its detection zone within 30 to 3,000 seconds, it shall command the system to the user-adjustable standby face velocity. When the sensor detects the presence and/or motion of an operator within the detection zone, it shall command the system to the in use face velocity within 1.0 second.

b. The sensor shall sense an inanimate object when placed in the detection zone and remain in the standard mode of operation for 30 to 3,000 seconds, after which it will return to a standby mode. Operators shall enter and leave the zone with the unit adjusting automatically between in-use and standby modes. If the inanimate object is moved or taken out of the zone, the unit shall adapt to the change automatically.

c. The sensor shall have an adjustable detection zone capable of covering a fume hood up to eight feet wide and be mounted from six to 12 feet above the floor surface.

d. The sensor shall be configurable for varying levels of lighting intensity and motion sensitivity.

e. The sensor shall have the ability to operate on either AC or DC power sources.

f. Wide area motion detectors (on the hood or at the room level) shall be unacceptable.

g. Motion detectors that rely solely on Doppler shift radar or similar technology for motion detection shall be unacceptable.

2.03 ACCEPTABLE MANUFACTURERS

A. Manufacturer List

The plans and specifications for the CSCP system are based on equipment manufactured by Phoenix Controls.

B. Substitute Limitations

1. In strict accordance with this specification, alternative critical spaces controls and equipment shall only be considered for approval provided that the equipment be equal in every respect to the operational characteristics, capacities and intent of control sequences specified herein. Approval to bid does not relieve the critical spaces controls and equipment supplier from complying with the minimum requirements or intent of this specification.
2. The engineer and owner shall be the sole judges of quality and equivalence of equipment, materials, methods and life cycle cost.
3. Only those systems specifically named in this specification or by addendum shall be considered for approval. Other systems submitted after the bid opening will be returned without review.
4. Compliance Schedule
 - a. Any alternate critical spaces controls and equipment supplier shall provide a separate compliance schedule, which shall include the section, paragraph and subparagraph of these specifications, and a direct statement to indicate compliance or noncompliance with the requirements. For all areas of noncompliance, the supplier shall describe what specific and alternative approach or approaches has been taken and document the impact this will

have on the sizing of the air delivery systems, the required cooling and heating capacities, energy costs and maintenance of the building.

- b. The alternate critical spaces controls and equipment supplier shall furnish a letter of compliance to the engineer, signed by a corporate officer of a comparable critical spaces controls and airflow system manufacturer, certifying the compliance and noncompliance items as stated above 10 days prior to the bid.

2.04 PERFORMANCE/DESIGN CRITERIA

- A. Each laboratory shall have a dedicated CSCP. Each dedicated CSCP shall support a minimum of 20 network controlled airflow devices (venturi valves) and 10 Fume Hood Displays.
- B. The CSCP shall employ individual average face velocity controllers that directly measure the area of the fume hood sash opening and proportionally control the hood's exhaust airflow to maintain a constant face velocity over a minimum range of 20% to 100% of sash travel. The corresponding minimum hood exhaust flow turndown ratio shall be 5 to 1. Use of Sidewall Sensors or Through The Wall (TTW) sensors to control the face velocity are unacceptable.
- C. The hood exhaust airflow control device shall respond to the fume hood sash opening by achieving 90% of its commanded value within one second of the sash reaching 90% of its final position (with no more than 5% overshoot/undershoot) of required airflow. Rate of sash movement shall be from one to one and one-half feet per second.
- D. The hood exhaust airflow control device shall be switched automatically between in-use and standby levels based on the operator's presence immediately in front of the hood. A presence and motion sensor shall activate the switching. The airflow control device shall achieve the required in-use commanded value in less than one second from the moment of detection with no more than a 5% overshoot or undershoot.
- E. The CSCP shall maintain specific airflow ($\pm 5\%$ of signal within one second of a change in duct static pressure) regardless of the magnitude of the pressure change, airflow change or quantity of airflow control devices on the manifold (within 0.3" to 3.0" wc).
- F. The CSCP shall use volumetric offset control to maintain room pressurization when fume hoods are present. Progressive offset control (POC) otherwise called differential pressure reset or dynamic pressure control can be utilized in spaces that do not have fume hoods. The system shall maintain proper room pressurization polarity (negative or positive) regardless of any change in room/system conditions, such as the raising and lowering of any or all fume hood sashes or rapid changes in duct static pressure.
- G. The CSCP shall maintain specific airflow ($\pm 5\%$ of signal) with a minimum turndown as specified in 2.04 - B to ensure accurate pressurization at low airflow and guarantee the maximum system diversity and energy efficiency.
- H. Airflow Control Sound Specification
 1. The CSCP manufacturer shall provide comprehensive sound power level data for each size airflow control device. All data shall be obtained from testing in accordance with ASHRAE/ANSI Standard 130, Methods of Testing Air Terminal Units.
 2. All proposed airflow control devices shall include discharge, exhaust, low pressure shutoff, and radiated sound power level performance.
 3. If the airflow control device cannot meet the sound power levels required to achieve the sound criteria appropriate for the space, as determined by the engineer, a properly sized sound attenuator must be used. All sound attenuators must be of a packless design (constructed of at least 18 gauge 316L stainless steel when used with fume hood exhaust) with a maximum pressure drop at the device's maximum rated flow rate not to exceed 0.20 inches of water.

2.05 OPERATION SEQUENCES

- A. The airflow control devices within the Critical Spaces Control Platform shall utilize communicating room level control architecture to perform control functions within a high-speed room. For standard speed controls, hardwired connections from the Programmable BACnet Controller to associated valves shall be acceptable as long as the control algorithm is intelligent enough to understand valve position, stop driving valves when there is a failure, and provide an alarm to the BAS or BMS. Control functions shall include, at a minimum, volumetric offset pressurization, temperature, humidity control, as well as respond to hood flow demands, occupancy, and emergency control commands.
- B. Volumetric Offset Pressurization Control
The CSCP shall control supply and auxiliary exhaust airflow devices to maintain a volumetric offset (either positive or negative). Offset shall be maintained regardless of any change in flow or static pressure (within specified range for medium or low pressure valves). This offset shall be field adjustable and represents the volume of air, which will enter (or exit) the room from the corridor or adjacent spaces.

The pressurization control algorithm shall sum the flow values of all supply and exhaust airflow devices and command appropriate controlled devices to new set points to maintain the desired offset. The offset shall be adjustable as a configurable parameter in the CSCP as set by startup technician or BMS/BAS.

The pressurization control algorithm shall consider both networked devices, as well as:

1. Attached non-networked devices providing a linear analog flow signal.
2. Any number of constant volume devices where the total of supply devices and the total of exhaust devices may be factored into the pressurization control algorithm.

Volumetric offset shall be the preferred method of controlling room pressurization in Laboratories with VAV fume hoods. The volumetric offset control algorithm shall support the ability to regulate the distribution of total supply flow across multiple supply airflow control devices in order to optimize air distribution in the space.

C. Temperature Control

1. Standard Primary Temperature Control

The laboratory control system shall regulate the space temperature through a combination of volumetric thermal override and control of reheat coils and/or auxiliary temperature control devices. The laboratory control system shall support up to four separate temperature zones for each pressurization zone. Each zone shall have provisions for monitoring up to five temperature inputs and calculating a straight-line average to be used for control purposes. Separate cooling and heating set points shall be writeable from the BMS, with the option of a local offset adjustment.

Temperature control shall be implemented through independent primary cooling and heating control functions. Primary heating shall be provided through the use of a modulating control of a properly sized reheat coil. Primary cooling shall be provided as a function of volumetric override or through auxiliary modulating control of a chilled water valve. Volumetric override will command both supply and general exhaust valves to maintain desired offset as a high select zone control. Volumetric cooling override may be staged before or after chilled water control valve.

D. Humidity Control

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The laboratory control system shall have an embedded humidity control function, which allows the monitoring and control of the relative humidity level in the pressurized zone. Using peer-to-peer control, the airflow devices shall have the ability to monitor the relative humidity level of the space and, based on a BMS writeable set point, develop a control signal to drive one or the other humidification or dehumidification control circuits.

The humidity control loop(s) shall share a common set point, with a configurable deadband adjustment to prevent the humidification and dehumidification control functions to operate at the same time. A Dew Point Sensor contact can be used to manually reset or disable humidification/dehumidification output as "Humidity PID Reset". The contact can reset automatically, use a timed latch, or BMS command to reset.

E. Occupancy Control

The laboratory control system shall have the ability to change the minimum ventilation and/or temperature control set points, based on the occupied state, in order to reduce energy consumption when the space is not occupied. The occupancy state may be set by either the BMS as a scheduled event or through the use of a local occupancy sensor or switch. The laboratory control system shall support a local occupancy override button that allows a user to override the occupancy mode and set the space to occupied for a predetermined interval. The override interval shall be configurable from one to 1440 minutes. The local occupancy sensor/switch or bypass button shall be given priority over a BMS command.

F. Emergency Mode Control

The laboratory control system shall provide a means of overriding temperature and pressurization control in response to a command indicating an emergency condition exists, and airflow control devices are to be driven to a specific flow set point. The system shall support up to four emergency control modes (zone or valve level). The emergency control modes may be initiated either by a local contact input or BMS command. Valve level emergency modes can be individually programmed on each valve as one of four emergency control modes. Zone level emergency modes will drive supply and exhaust valves to maintain or ignore zone offset (excludes control of hood valves).

Once an emergency mode is invoked, pressurization and temperature control are overridden for the period that the mode is active. Emergency modes shall have a priority scheme allowing a more critical mode to override a previously set condition.

G. Local Alarm Control

The laboratory control system shall provide the means of summing selective alarm activity at the room-level network and generating a local alarm signal. The local alarm signal may be directed to any available output, as well as to the BMS. The alarm mask may be configured differently for each room-level system.

H. Shutoff Control (Standard and Low Leakage Shutoff Valves Only)

The CSCP systems shall provide means of commanding air flow devices to shutoff sequence in one of four modes.

1. Emergency Mode Control: The shutoff sequence can be initiated locally through a universal input or remotely from the BMS or other controller such as a local user interface using emergency mode(s). Fume hood air flow devices cannot be controlled locally using a universal input except for hibernation mode.
2. Hibernation Mode Control: The shutoff sequence can be initiated on a fume hood air flow device using hibernation mode in conjunction with a FHD500 fume hood display in one of three methods: local contact closure, pushbutton sequence using faceplate of fume hood display, or remotely via BMS. If the sash on the fume hood is moved when hood is in hibernation mode, hood will automatically return to

normal operation with no interaction to the fume hood monitor or fume hood display. Hibernation or decommission modes that require occupant to enter the fume hood monitor or fume hood display menu or settings to return to normal control mode are unacceptable.

3. Auto Gex Shutoff Mode Control: The shutoff sequence can be initiated on a general exhaust (Gex) air flow device in a lab environment when the total non-Gex exhaust air flow satisfies minimum air change rate and cooling demand for a period greater than 60 seconds. Shutoff must be enabled on the general exhaust air flow device.
4. IAQ Mode Control: The shutoff sequence can be initiated when exhaust air flow is distributed between a general exhaust and return air flow device. If shutoff is enabled, the general exhaust air flow device will shut when return ratio is 100% and the return air flow device will shut when the return ratio is 0%.

I. Diversity Alarm

The laboratory control system shall have the ability of monitoring the airflow values for the pressurized space and generating an alarm signal in the event the total exhaust flow exceeds a predetermined threshold. The diversity alarm is intended to allow the user to take diversity in the design and generate an alarm condition in the event the diversity threshold is compromised. This function must be available in either an integrated or standalone system.

- J. The High Speed CSCP system shall be segregated into subnets to isolate network communications to ensure room-level control functions and BMS communications are carried out reliably. Each laboratory space or pressurization zone shall be on a single subnet. Phoenix Controls Programmable BACnet Controllers (PBC) shall be used to isolate the subnets in a facility where BMS or BAS system is used, providing a maximum of 20 valves and up to 10 fume hood displays per subnet. Individual valves operating on Actuator Control Module (ACM) or standard speed valves directly wired to a PBC can be on a dedicated subnet or can be on a BMS or BAS network trunk.

- L. All points shall be available through the interface to the BMS for trending, archiving, graphics, alarm notification and status reports. CSCP performance (speed, stability and accuracy) shall be unaffected by the quantity of points being monitored, processed or controlled.

2.06 INTERFACE TO BUILDING MANAGEMENT SYSTEMS

- A. The CSCP network shall digitally interfacing with the existing BMS (JCI control system). The required software interface drivers shall be developed and housed in one or more dedicated interface devices furnished by the CSCP supplier.
- B. All room-level points shall be integrated to the BMS for monitoring or trending. For integration points of individual components, reference Actuator Control Module Guide Specification (MKT-0527), Programmable BACnet Controller Guide Specification (MKT-0520), and Fume Hood Display (FHD500) Guide Specification (MKT-0515).
- C. The Room-level network shall be BACnet MS/TP communications protocol and shall be connected to the BAS or BMS through the Programmable BACnet Controller (PBC) or directly to the Actuator Control Modules (ACM).
- D. If the Programmable BACnet Controller device drops off the BAS or BMS network, it shall not cause the zone balance, temperature control, or fume hood devices to lose control. The room level valve devices should operate independently from the building level integration. Fume Hood controls and operation shall remain operations regardless of loss of communication from PBC or BAS or BMS control. For zone balance, hardwired control of

fume hood, general exhaust or supply valves for zone balance, temperature control, room offset, etc. will not be acceptable.

- E. Update the graphics and points on the existing JCI control system to reflect the new fume hood controls.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The building management system (BMS) or building automation system (BAS) contractor shall install the sash sensors, interface boxes, presence and motion sensor, and fume hood display on the fume hood under initial supervision of the CSCP supplier. Reel-type sash sensors and their stainless steel cables shall be hidden from view. Bar-type sash sensors shall be affixed to the individual sash panels or use of fixed sash sensors with take up reels is also permitted. Sash interface boxes with interface cards shall be mounted in an accessible location. Sidewall sensors are not acceptable for use to control the fume hood valves. If sidewall sensors are installed for monitoring purposes or drift alarm, follow manufacturer installation instructions and reference Phoenix Controls control wiring details for connection to Phoenix valve controllers.
- B. The BMS contractor shall install all PBC's in accessible locations in or around the designated room.
- C. The BMS shall install an appropriately sized and fused 24 VAC transformer suitable for NEC Class II wiring.
- D. All cable shall be furnished and installed by the BMS contractor. The BMS contractor shall terminate and connect all cables as required. The BMS shall utilize cables specifically recommended by the CSCP supplier.
- E. The mechanical contractor shall install all airflow control devices in the ductwork and shall connect all airflow control valve linkages.
- F. The mechanical contractor shall provide and install all reheat coils, Neutralizers, Silencers, and transitions.
- G. The mechanical contractor shall provide and install insulation as required.
- H. Each pressurization zone shall have either a dedicated, single-phase primary circuit or a secondary circuit disconnect.

3.02 SYSTEM STARTUP

- A. System startup shall be provided by a factory-authorized representative of the CSCP manufacturer. Startup shall include calibrating the fume hood display and any combination sash sensing equipment, as required. Startup shall also provide electronic verification of airflow (fume hood exhaust, supply, make-up, general exhaust or return), system programming and integration to BMS (when applicable).
- B. The balancing contractor shall be responsible for final verification and reporting of all airflows. For all field flow measurement devices the balancer shall produce a flow report that documents field flows vs device flow and associated error. This to be tabulated for each device location at several flows including min and max. Cost and responsibility to meet the specified performance to be carried by the CSCP.

3.03 CLOSEOUT ACTIVITIES

- A. Training
 - 1. The CSCP supplier shall furnish a minimum of eight hours of owner training by factory trained and certified personnel. The training will provide an overview of the job specific airflow control components, verification of initial fume hood display

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calibration, general procedures for verifying airflows of air valves and general troubleshooting procedures.

2. Operation and maintenance manuals, including as-built wiring diagrams and component lists, shall be provided for each training attendee.

3.04 General Workmanship

- A. Install equipment, piping, and wiring or raceway horizontally, vertically, and parallel to walls wherever possible.
- B. Provide sufficient slack and flexible connections to allow for piping and equipment vibration isolation.
- C. Install equipment in readily accessible locations as defined by National Electrical Code (NEC) Chapter 1 Article 100 Part A.
- D. Verify wiring integrity to ensure continuity and freedom from shorts and ground faults.
- E. Equipment, installation, and wiring shall comply with industry specifications and standards and local codes for performance, reliability, and compatibility.

3.05 Field Quality Control

- A. Work, materials, and equipment shall comply with rules and regulations of applicable local, state, and federal codes and ordinances as identified in Section 15950 Article 1.8 (Codes and Standards).
- B. Continually monitor field installation for code compliance and workmanship quality.
- C. Contractor shall arrange for work inspection by local or state authorities having jurisdiction over the work.

3.06 Wiring

- A. Control and interlock wiring and installation shall comply with national and local electrical codes and manufacturer's recommendations.
- B. NEC Class 1 (line voltage) wiring shall be UL listed in approved raceway as specified by NEC and Section 16050.
- C. Low-voltage wiring shall meet NEC Class 2 requirements. Subfuse low-voltage power circuits as required to meet Class 2 current limit.
- D. NEC Class 2 (current-limited) wires not in raceway but in concealed and accessible locations such as return air plenums shall be UL listed for the intended application.
- E. Install wiring in raceway where subject to mechanical damage and at levels below 3 m (10ft) in mechanical, electrical, or service rooms.
- F. Install Class 1 and Class 2 wiring in separate raceways. Boxes and panels containing high-voltage wiring and equipment shall not be used for low-voltage wiring except for the purpose of interfacing the two through relays and transformers.
- G. Do not install wiring in raceway containing tubing.

- H. Run exposed Class 2 wiring parallel to a surface or perpendicular to it and tie neatly at 3 m (10 ft) intervals.
- I. Use structural members to support or anchor plenum cables without raceway. Do not use ductwork, electrical raceways, piping, or ceiling suspension systems to support or anchor cables.
- J. Secure raceways with raceway clamps fastened to structure and spaced according to code requirements. Raceways and pull boxes shall not be hung on or attached to ductwork, electrical raceways, piping, or ceiling suspension systems.
- K. Size raceway and select wire size and type in accordance with manufacturer's recommendations and NEC requirements.
- L. Include one pull string in each raceway 2.5 cm (1 in.) or larger.
- M. Use color-coded conductors throughout.
- N. Locate control and status relays in designated enclosures only. Do not install control and status relays in packaged equipment control panel enclosures containing Class 1 starters.
- O. Conceal raceways except within mechanical, electrical, or service rooms. Maintain minimum clearance of 15 cm (6 in.) between raceway and high-temperature equipment such as steam pipes or flues.
- P. Adhere to requirements in Section 16050 where raceway crosses building expansion joints.
- Q. Install insulated bushings on raceway ends and enclosure openings. Seal top ends of vertical raceways.
- R. Terminate control and interlock wiring related to the work of this section. Maintain at the job site updated (as-built) wiring diagrams that identify terminations.
- S. Flexible metal raceways and liquid-tight flexible metal raceways shall not exceed 1 m (3 ft) in length and shall be supported at each end. Do not use flexible metal raceway less than ½ in. electrical trade size. Use liquid-tight flexible metal raceways in areas exposed to moisture including chiller and boiler rooms.
- T. Install raceway rigidly, support adequately, ream at both ends, and leave clean and free of obstructions. Join raceway sections with couplings and according to code. Make terminations in boxes with fittings. Make terminations not in boxes with bushings.

3.07 Communication Wiring

- A. Communication wiring shall be low-voltage Class 2 wiring and shall comply with Article 3.7 (Wiring).
- B. Install communication wiring in separate raceways and enclosures from other Class 2 wiring.
- C. During installation do not exceed maximum cable pulling, tension, or bend radius specified by the cable manufacturer.

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- D. Verify entire network's integrity following cable installation using appropriate tests for each cable.
- E. Install lightning arrestor according to manufacturer's recommendations between cable and ground where a cable enters or exits a building.
- F. Each run of communication wiring shall be a continuous length without splices when that length is commercially available. Runs longer than commercially available lengths shall have as few splices as possible using commercially available lengths.
- G. Label communication wiring to indicate origination and destination.
- H. Ground coaxial cable according to NEC regulations article on "Communications Circuits, Cable, and Protector Grounding."

3.08 Fiber Optic Cable

- A. During installation do not exceed maximum pulling tensions specified by cable manufacturer. Post-installation residual cable tension shall be within cable manufacturer's specifications.
- B. Install cabling and associated components according to manufacturers' instructions. Do not exceed minimum cable andunjacketed fiber bend radii specified by cable manufacturer.

3.09 Installation of Sensors

- A. Install sensors according to manufacturer's recommendations.
- B. Mount sensors rigidly and adequately for operating environment.
- C. Install room temperature sensors on concealed junction boxes properly supported by wall framing.
- D. Air seal wires attached to sensors in their raceways or in the wall to prevent sensor readings from being affected by air transmitted from other areas.
- E. Use averaging sensors in mixing plenums and hot and cold decks. Install averaging sensors in a serpentine manner vertically across duct. Support each bend with a capillary clip.
- F. Install mixing plenum low-limit sensors in a serpentine manner horizontally across duct. Support each bend with a capillary clip. Provide 3 m (1 ft) of sensing element for each 1 m² (1 ft²) of coil area.
- G. Install pipe-mounted temperature sensors in wells. Install liquid temperature sensors with heat-conducting fluid in thermal wells.
- H. Install outdoor air temperature sensors on north wall at designated location with sun shield.
- I. Differential Air Static Pressure.
 - 1. Supply Duct Static Pressure. Pipe high-pressure tap to duct using a pitot tube. Make pressure tap connections according to manufacturer's recommendations.

2. Return Duct Static Pressure. Pipe high-pressure tap to duct using a pitot tube. Make pressure tap connections according to manufacturer's recommendations.
 3. Building Static Pressure. Pipe pressure sensor's low-pressure port to the static pressure port located on the outside of the building through a high-volume accumulator. Pipe high-pressure port to a location behind a thermostat cover.
 4. Piping to pressure transducer pressure ports shall contain a capped test port adjacent to transducer.
 5. Pressure transducers, except those controlling VAV boxes, shall be located in control panels, not on monitored equipment or on ductwork. Mount transducers in a vibration-free location accessible for service without use of ladders or special equipment.
 6. Mount gauge tees adjacent to air and water differential pressure taps. Install shut-off valves before tee for water gauges.
- J. Smoke detectors, freezestats, high-pressure cut-offs, and other safety switches shall be hard-wired to de-energize equipment as described in the sequence of operation. Switches shall require manual reset. Provide contacts that allow DDC software to monitor safety switch status.

3.10 Flow Switch Installation

- A. Use correct paddle for pipe diameter.
- B. Adjust flow switch according to manufacturer's instructions.

3.11 Actuators

- A. General. Mount actuators and adapters according to manufacturer's recommendations.
- B. Electric and Electronic Damper Actuators. Mount actuators directly on damper shaft or jackshaft unless shown as a linkage installation. Link actuators according to manufacturer's recommendations.
 1. For low-leakage dampers with seals, mount actuator with a minimum 5° travel available for damper seal tightening.
 2. To compress seals when spring-return actuators are used on normally closed dampers, power actuator to approximately 5° open position, manually close the damper, then tighten linkage.
 3. Check operation of damper-actuator combination to confirm that actuator modulates damper smoothly throughout stroke to both open and closed positions.
 4. Provide necessary mounting hardware and linkages for actuator installation.
- C. Valve Actuators. Connect actuators to valves with adapters approved by actuator manufacturer.

3.12 Warning Labels

- A. Affix permanent warning labels to equipment that can be automatically started by the control system.
 - 1. Labels shall use white lettering (12-point type or larger) on a red background.
 - 2. Warning labels shall read as follows.

<p style="text-align: center;">CAUTION</p> <p style="text-align: center;">This equipment is operating under automatic control and may start or stop at any time without warning. Switch disconnect to "Off" position before servicing.</p>
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- B. Affix permanent warning labels to motor starters and control panels that are connected to multiple power sources utilizing separate disconnects.
 - 1. Labels shall use white lettering (12-point type or larger) on a red background.
 - 2. Warning labels shall read as follows.

<p style="text-align: center;">CAUTION</p> <p style="text-align: center;">This equipment is fed from more than one power source with separate disconnects. Disconnect all power sources before servicing.</p>

3.13 Identification of Hardware and Wiring

- A. Label wiring and cabling, including that within factory-fabricated panels, with control system address or termination number at each end within 5 cm (2 in.) of termination.
- B. Label pneumatic tubing at each end within 5 cm (2 in.) of termination with a descriptive identifier.
- C. Permanently label or code each point of field terminal strips to show instrument or item served.
- D. Label control panels with minimum 1 cm (½ in.) letters on laminated plastic nameplates.
- E. Label each control component with a permanent label. Label plug-in components such that label remains stationary during component replacement.
- F. Label room sensors related to terminal boxes or valves with nameplates.
- G. Manufacturers' nameplates and UL or CSA labels shall be visible and legible after equipment is installed.
- H. Label identifiers shall match record documents.

3.14 Programming

- A. Point Naming. Name points as shown on the equipment points list provided with each sequence of operation. See Section 15950, Article 3.19 (Sequences of Operation). Where multiple points with the same name reside in the same controller, each point name may be customized with its associated Program Object number. For example, "Zone Temp 1" for Zone 1, "Zone Temp 2" for Zone 2.

- B. Software Programming. Programming shall provide actions for each possible situation. Graphic- or parameter-based programs shall be documented. Text-based programs shall be modular, structured, and commented to clearly describe each section of the program.
 - 1. Application Programming. Provide application programming that adheres to sequences of operation, Article 3.19, specified in Section 15950. Program documentation or comment statements shall reflect language used in sequences of operation.
 - 2. System Programming. Provide system programming necessary for system operation.
- C. Operator Interface.
 - 1. Standard Graphics. Provide graphics as specified in Section 15950 Article 2.3 Paragraph E.2 (System Graphics). Show on each equipment graphic input and output points and relevant calculated points such as indicated in Section 15950, Article 3.19 (Sequences of Operation). Point information on graphics shall dynamically update.
 - 2. Install, initialize, start up, and troubleshoot operator interface software and functions (including operating system software, operator interface database, and third-party software installation and integration required for successful operator interface operation) as described in Section 15950.

3.15 Control System Checkout and Testing

- A. Startup Testing. Complete startup testing to verify operational control system before notifying University of system demonstration. Provide University with schedule for startup testing. University may have representative present during any or all startup testing.
 - 1. Calibrate and prepare for service each instrument, control, and accessory equipment furnished under Section 15950.
 - 2. Verify that control wiring is properly connected and free of shorts and ground faults. Verify that terminations are tight.
 - 3. Enable control systems and verify each input device's calibration. Calibrate each device according to manufacturer's recommendations.
 - 4. Verify that binary output devices such as relays, solenoid valves, two-position actuators and control valves, and magnetic starters, operate properly and that normal positions are correct.
 - 5. Verify that analog output devices such as I/Ps and actuators are functional, that start and span are correct, and that direction and normal positions are correct. Check control valves and automatic dampers to ensure proper action and closure. Make necessary adjustments to valve stem and damper blade travel.
 - 6. Prepare a log documenting startup testing of each input and output device, with technician's initials certifying each device has been tested and calibrated.

7. Verify that system operates according to sequences of operation. Simulate and observe each operational mode by overriding and varying inputs and schedules. Tune PID loops and each control routine that requires tuning.
8. Alarms and Interlocks.
 - a. Check each alarm with an appropriate signal at a value that will trip the alarm.
 - b. Trip interlocks using field contacts to check logic and to ensure that actuators fail in the proper direction.
 - c. Test interlock actions by simulating alarm conditions to check initiating value of variable and interlock action.

3.16 Control System Demonstration and Acceptance

- A. Demonstration. Prior to acceptance, perform the following performance tests to demonstrate system operation and compliance with specification after and in addition to tests specified in Article 3.17 (Control System Checkout and Testing). Provide University Representative with log documenting completion of startup tests.
 1. Engineer will be present to observe and review system demonstration. Notify Engineer at least 10 days before system demonstration begins.
 2. Demonstration shall follow process submitted and approved under Section 15950 Article 1.10 (Submittals). Complete approved checklists and forms for each system as part of system demonstration.
 3. Demonstrate actual field operation of each sequence of operation as specified in Section 15950, Article 3.19. Provide at least two persons equipped with two-way communication. Demonstrate calibration and response of any input and output points requested by University Representative. Provide and operate test equipment required to prove proper system operation.
 4. Demonstrate compliance with Section 15950 Part 1 (System Performance).
 5. Demonstrate compliance with sequences of operation through each operational mode.
 6. Demonstrate complete operation of operator interface.
 7. Demonstrate each of the following.
 - a. DDC loop response. Supply graphical trend data output showing each DDC loop's response to a setpoint change representing an actuator position change of at least 25% of full range. Trend sampling rate shall be from 10 seconds to 3 minutes, depending on loop speed. Each sample's trend data shall show setpoint, actuator position, and controlled variable values. Engineer will require further tuning of each loop that displays unreasonably under- or over-damped control.
 - b. Demand limiting. Supply trend data output showing demand-limiting algorithm action. Trend data shall document action sampled each minute

over at least a 30-minute period and shall show building kW, demand-limiting setpoint, and status of setpoints and other affected equipment parameters.

- c. Building fire alarm system interface.
 - d. Trend logs for each system. Trend data shall indicate setpoints, operating points, valve positions, and other data as specified in the points list provided with each sequence of operation in Section 15950, Article 3.19. Each log shall cover three 48-hour periods and shall have a sample frequency not less than 10 minutes or as specified on its points list. Logs shall be accessible through system's operator interface and shall be retrievable for use in other software programs as specified in Section 15950 Article 2.3 Paragraph E.11 (Trend Configuration).
8. Tests that fail to demonstrate proper system operation shall be repeated after Contractor makes necessary repairs or revisions to hardware or software to successfully complete each test.

B. Acceptance.

- 1. After tests described in this specification are performed to the satisfaction of the University Representative, the University Representative will accept control system as meeting completion requirements. University Representative may exempt tests from completion requirements that cannot be performed due to circumstances beyond Contractor's control. University Representative will provide written statement of each exempted test. Exempted tests shall be performed as part of warranty.
- 2. System shall not be accepted until completed demonstration forms and checklists are submitted and approved as required in Section 15950 Article 1.10 (Submittals).

3.17 Cleaning

- A. Each day clean up debris resulting from work. Remove packaging material as soon as its contents have been removed. Collect waste and place in designated location.
- B. On completion of work in each area, clean work debris and equipment. Keep areas free from dust, dirt, and debris.
- C. On completion of work, check equipment furnished under this section for paint damage. Repair damaged factory-finished paint to match adjacent areas. Replace deformed cabinets and enclosures with new material and repaint to match adjacent areas.

3.18 Training

- A. Provide training for a designated staff of University's representatives. Training shall be provided via self-paced training, web-based or computer-based training, classroom training, or a combination of training methods.
- B. Training shall enable students to accomplish the following objectives.
 - 1. Proficiently operate system

2. Understand control system architecture and configuration
 3. Understand DDC system components
 4. Understand system operation, including DDC system control and optimizing routines (algorithms)
 5. Operate workstation and peripherals
 6. Log on and off system
 7. Access graphics, point reports, and logs
 8. Adjust and change system setpoints, time schedules, and holiday schedules
 9. Recognize common HVAC system malfunctions by observing system graphics, trend graphs, and other system tools
 10. Understand system drawings and Operation and Maintenance manual
 11. Understand job layout and location of control components
 12. Access data from DDC controllers
 13. Operate portable operator's terminals
 14. Create and change system graphics
 15. Create, delete, and modify alarms, including configuring alarm reactions
 16. Create, delete, and modify point trend logs (graphs) and multi-point trend graphs
 17. Configure and run reports
 18. Add, remove, and modify system's physical points
 19. Create, modify, and delete application programming
 20. Add operator interface stations
 21. Add a new controller to system
 22. Download firmware and advanced applications programming to a controller
 23. Configure and calibrate I/O points
 24. Maintain software and prepare backups
 25. Interface with job-specific, third-party operator software
 26. Add new users and understand password security procedures
- C. Divide presentation of objectives into three sessions (1-13, 14-23, and 24-26).
Participants will attend one or more of sessions, depending on knowledge level required.
1. Day-to-day Operators (objectives 1-13)

2. Advanced Operators (objectives 1-13 and 14-23)
 3. System Managers and Administrators (objectives 1-13 and 24-26)
- D. Provide course outline and materials according to Section 15950 Article 1.8 (Submittals).
Provide one copy of training material per student.
- E. Instructors shall be factory-trained and experienced in presenting this material.
- F. Perform classroom training using a network of working controllers representative of
installed hardware.

END OF SECTION 15950

PART 1 GENERAL

1.1 SUMMARY

- A. Furnish all labor, tools, materials, fixtures, equipment, accessories, transportation, etc., required for complete electrical lighting and power systems, complete with necessary auxiliaries as indicated on drawings and as hereinafter specified.
- B. The GENERAL CONDITIONS of the Contract, Drawings and Specifications shall apply to all work under this Section. Separation of Specifications into Sections is for convenience only and is not intended to establish limits of work or liability.
- C. In general, the work shall consist of the following installations:
 - 1. Power wiring and connection to new mechanical equipment.
- D. Prior to submitting quotation for electrical work, Contractor shall visit and examine the job site in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed for failure to be so informed.
- E. It is the intent of these specifications that in all particulars, the materials and workmanship shall conform to the best practice and that the equipment and accessories as furnished and installed shall be complete and ready to operate.
- F. All materials shall be new, except where otherwise indicated, and shall conform with the standards of underwriters' Laboratories in every case where such a standard has been established for the particular type of material in question.
- G. The drawings showing the layout of electrical work indicate approximate location of the outlets, receptacles, panelboards and other electrical equipment, unless noted otherwise. The runs of feeders and branches are schematic only and are not intended to show the exact routing of conduits. Certain routings are as shown to avoid areas with asbestos materials, and may not allow for deviation. The final determination of the routing shall be governed by structural conditions, other conditions and other construction. The Contractor shall consult all drawings which may affect the location of any outlet, apparatus, or equipment to avoid possible interference and any reasonable changes in the location of an outlet, apparatus or equipment, up to the time of rough-in, is reserved by the University Representative, and any minor deviations shall be made without additional cost. It shall be the Contractor's responsibility to see that all equipment such as junction boxes, panelboards, switches, and other apparatus, as may require maintenance from time to time, are made easily accessible. Although the location of the equipment may be shown on the drawings, the construction may disclose the fact that such location does not make its position readily accessible, in which case the Contractor shall call the University Representative's attention to the condition before advancing the construction to a point where a change in location would require additional cost.

1.2 MEASUREMENTS

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Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings, and accessories necessary. The Contractor shall carefully investigate structural conditions, walls, furring and chase locations and room finishes and shall make actual measurements on the job so that the panelboards, switches, receptacles, lighting fixtures and accessories shall fit.

1.3 LAWS, CODES AND PERMITS

- A. Latest edition of the following listed established standards constitute part of the specification requirements.

National Electrical Code - 2005 (NFPA No. 70)
Applicable State Requirements
Underwriters' Laboratories (UL)
Electrical Testing Laboratories (ETL)
American National Standard Institute (ANSI)
NFPA 101 Life Safety Code – 2007

1.4 JOB CONDITIONS

- A. Accompanying drawings, including plans, details, diagrams, notes, etc., are shown to limit and explain structural conditions, construction requirements, sizes, capacities and method of installation and erection. Structural and other conditions may require certain modifications and adjustments from conditions shown. Such deviations are permissible; however, specific sizes capacities and requirements affecting the satisfactory performance and operation of the installation shall remain unchanged. Make allowance for normal job conditions and interferences.
- B. Ask for details whenever uncertain about method of installation. Lack of details not requested shall not excuse improper installation and correction shall be responsibility of the Contractor.
- C. Schedule and perform all electrical work to avoid delays to the Contractor and other trades.
- D. In addition to the basic work covered under this contract, the Contractor shall plan and schedule the work to permit continuous operation of essential services of existing facilities. Planning shall also include scheduling necessary interruptions of electrical service to existing building at times when such interruptions will cause minimum interference with existing routine and services. All such interruptions shall be made only after consultation with the University. This is extremely important since included in the work is a relocation and rerouting of and connecting to existing facilities. No additional compensation will be allowed for failure to be so informed. Contractor shall provide temporary power connections as required to execute work as shown on drawings.
- E. It is essential that all adjacent areas of the building be kept in operation at all times, except when specific permission is given to contrary. Before any power or equipment is shut down for disconnecting, tie-ins, or rearranging of services, make arrangements with University representative to do this work at night, or Sunday, or at special time of day or year with length of shutdown agreed upon before work is begun. Contractor to bear any overtime or work costs in this connection.

- F. All piping, conduits, conductors and other electrical items in way of construction, shall be rerouted, relocated or otherwise adjusted to work out with such construction or changes shown or specified in any or all of various sections of specifications. Unknown electrical devices that are encountered will be referred immediately to University Representative for method of disposition before continuation of work.
- G. The Contractor shall review the drawings to become familiar with the phasing of construction required for this project.

PART 2 PRODUCTS AND INSTALLATION

2.1 APPROVALS

- A. Name of manufacturer or catalog numbers are mentioned herein in order to establish a standard as to design and quality. Other products similar in design and of equal quality may be used if submitted to the University Representative and approved by him.
- B. Within twenty-one (21) days after award of General Contract, Contractor shall submit complete dimensional shop drawings and descriptive literature covering the following equipment and materials. Written approval thereof must be obtained before ordering or installation.

Safety Switches
Wiring

Conduit and Fittings

- C. Comply with requirements regarding submittals, number of copies, and procedures.

2.2 PROTECTION OF FIXTURES, MATERIAL AND EQUIPMENT

- A. Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the University's property from injury or loss, except as may be caused by agents or employees of the University. He shall adequately protect adjacent property as provided by law.
- B. Conduit openings shall be capped or plugged during installation. Fixtures and equipment shall be tightly covered and protected against dirt, moisture, chemical and mechanical injury. At the completion of the work, the fixtures, material and equipment shall be thoroughly cleaned and delivered in condition satisfactory to the University Representative.

2.3 CUTTING, PATCHING, AND SEALING

- A. All cutting and patching for the work of this Section shall be in accordance with the requirements of the GENERAL CONDITIONS. The Contractor shall perform all necessary cutting and patching required for the installation of work. Where floor or roof is cut or penetrated the structural integrity shall be maintained or restored. Cutting of structural members is prohibited except with prior approval of the University Representative.
- B. Penetrations of all walls, floors, and ceilings shall be sealed with a material capable of preventing the passage of flames and gases in accordance with the requirements of the test standard ASTM-E-814 for fire stops. The integrity of the fire rating, as indicated on the architectural drawings, shall be maintained.

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2.4 CLEANING UP

- A. This Contractor shall promptly remove from the jobsite all debris, surplus and waste materials, empty crates and cartons resulting from his work.
- B. This Contractor shall remove all oil, grease or other stains resulting from his work performed in the building or the exterior thereof.

2.5 TESTING AND BALANCING

- A. Make tests which may be required by the University or the University Representative in connection with the operation of the electrical system in the building.
- B. All tests shall be made in accordance with the latest standards of the IEEE and the NEC.
- C. The installation shall be tested for performance, grounds, and insulation resistance. "Megger" type instrument shall be used. Circuit continuity tests and operational tests on all equipment furnished and/or connected by him shall be made by the Contractor after such equipment has been installed.
- D. The tests shall be made in the presence of the University Representative. The Contractor shall notify the University or his representative. The Contractor shall notify the University and the University Representative at least seventy-two (72) hours in advance of tests. The Contractor shall provide all testing equipment and all costs shall be borne by him. Written reports shall be made of all tests. All faults shall be corrected immediately.

2.6 PAINTING

- A. Contractor shall touch-up or refinish all items of electrical equipment furnished with a factory finish coat of paint and which may have been damaged regardless of cause.
- B. All electrical equipment such as switches, panelboards, motor controllers, etc., shall be suitably identified with micarta nameplates.

2.7 GUARANTEE

Upon completion of all tests and acceptance, the Contractor shall furnish the University a written guarantee covering all electrical work under this Contract for a period of one (1) year from date of final acceptance. Upon notice from the University or University Representative during the Guarantee period, the Contractor shall replace defective materials and correct faults of workmanship and repair any damage caused thereby promptly and free of any charge. Fuses and lamps are excluded from the guarantee.

2.8 CONTRACTOR'S QUALIFICATIONS

The Contractor must be licensed to perform such work as required by State and Local laws.

2.9 DIRECTORY CARDS, NAMEPLATES AND EQUIPMENT LABELS

Provide in the directory frame of each panelboard and for each feeder switch or circuit breaker, neatly typed directory cards indicating the general area and type of electrical load.

2.10 SUBSTITUTION

- A. All specified material, equipment, fixtures, etc., entering into the work under this section of contract are subject to the prior approval or disapproval of the University Representative. Refer to Section 3.3 (Substitutions) in Instructions to Bidders for approval procedures.
- B. Materials, equipment, fixtures, etc., herein named or indicated on drawings establish the type, size, appearance and quality required of products other manufacturers must meet to be acceptable.
- C. Requests for substitutions must include necessary data to conclusively demonstrate equality in type, size, appearance, quality, etc. Any deviation in the opinion of University Representative may be cause for rejection.

PART 3 EXECUTION

3.1 COMMISSIONING

- A. Contractor shall install all items of equipment as identified in this specification in strict accordance with manufacturer's requirements (whether identified in this specification or not), shop drawings and contract documents. Contractor shall insure a complete installation. Start-up of all equipment shall be by manufacturer authorized representative. Start-up services shall be provided for as long a period of time as is necessary to insure proper operation of the equipment items. The start-up technician shall conduct all operating tests as required to insure the equipment is operating in accordance with design parameters. Complete testing of all safety and emergency control devices shall be made. The start-up technician shall submit a written report to the University Representative (prior to final punch list inspection) containing all test data recorded as required above and a letter certifying that the equipment is operating properly.
- B. Other specific items of commissioning shall be as follows:
 - 1. Test and balance all new power feeders over 50 amps in accordance with Section 16010, Article 2.5.
 - 2. Provide written reports for all tests described above prior to final punch list inspection.

END OF SECTION - 16010

SECTION 16050 – ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Applicable items of this Section shall apply to all sections of ELECTRICAL.

PART 2 PRODUCTS AND INSTALLATION

2.1 METHODS OF WIRING

- A. No wire shall be smaller than No. 12 except those for fixture drops and for control circuits of equipment. All wire shall have 600-volt insulation equivalent to type THHN/THWN unless otherwise noted on the drawings.
- B. Conductors shall be continuous from outlet to outlet and no splices shall be made except in outlet or junction boxes.
- C. Homeruns to panelboards may be collected in one or more conduits provided all circuiting is done in accordance with Code requirements and the maximum unbalanced current does not exceed the capacity of the neutral conductors.
- D. Powdered soapstone or approved pulling compound shall be used as a pulling lubricant for all non-lead covered conductors. Use Thomas and Betts Wireslick, Ideal 77 or equal.
- E. All empty conduits installed shall contain a #14 fish wire.
- F. Conduit sizes shall conform to the requirements of the National Electric Code and/or sizes shown on the drawings. Minimize size conduit shall be 1/2".
- G. Vertical penetrations of concrete slabs shall be cored and sealed with fire stop. Size and location of all sleeves are subject to the approval of the structural engineer. Conduits routed below the first floor slab shall be rigid galvanized conduit, supported using 3/8" stainless steel threaded rods and steel framing, hot-dipped galvanized after fabrication. Supports shall be spaced in accordance with NEC-346-12. Any exposed conduits on exterior of building, shall be heavy wall hot dipped galvanized rigid conduit.
- H. Conduits in metal stud walls, exposed within mechanical and electrical rooms, and above ceilings shall be EMT. Conduits in hollow cmu walls shall be EMT with concrete tight set screw fittings. Conduits in solid, infilled cmu walls shall be Schedule 40 PVC.
- I. All raceways shall be concealed unless otherwise indicated.
- J. All conduit and tubing shall be Armco, Plastic Wire & Cable, Steelduct, Republic, Allied, or approved equal.
- K. Branch circuit conduits feeding outlets in masonry walls shall be concealed in masonry. Where outlet boxes are indicated in bare masonry walls, the box shall be mounted so that two edges of the box or plaster cover will fall in a mortar joint. Where switchboxes will not accommodate the number of conductors required and 4" square or larger boxes are installed,

ELECTRICAL MATERIALS AND METHODS

- the device covers shall be manufactured by Steel City Manufacturing Co., or Appleton, 1" minimum in depth, with straight rectangular openings for drywall construction. Where grouting is required to fill up improperly cut openings in the masonry, the work will be rejected. Contractor shall cooperate with the bricklayer to insure a neat and workmanlike job.
- L. Solderless Fixed spring connectors (T & B 10-100, Ideal wrap-cap, or equal) shall be used for all branch circuit wiring and fixture connections on all conductors #10 AWG and smaller. Split bolt or 2 bolt connectors (T & B 6 HPW, O-Z Gedney PMX, or equal) shall be used for connections and splices on all conductors #8 AWG or larger.
 - M. Connections to all motors not equipped with a portable cord shall be made with a short piece of flexible metal conduit between rigid conduit system and motor terminal box. Ground bond of separate copper conductor shall be made between motor frame and rigid conduit system. In all outdoor locations, liquid tight flexible metal conduit shall be used.
 - N. All recessed fixtures, unless they contain a box approved for THW wire shall be wired with THHN, in three feet (3') maximum of flexible metal conduit from a box at least one foot (1') from the fixture. Not more than two individual or two rows of continuous fixtures shall be connected to any one of these outlet boxes. This box shall be located above the ceiling and shall be accessible by removing fixture. Installation of blank covers on ceilings to provide access to such boxes will not be acceptable.
 - O. Splices in all low voltage wiring shall be made at terminal blocks furnished with the equipment. At junction boxes or where other splices are required, these splices shall be soldered.
 - P. Other routings than those indicated may not be used without the approval of the University Representative, but Contractor shall make allowance for possible obstructions to routes indicated. Conduits shall be grouped together and run on common hangers parallel to building lines in areas of open ceilings.

2.2 WIRING IN RACEWAYS

- A. Conduit sizes shall conform to requirements of the National Electrical Code and/or sizes shown on drawings.
- B. It is not mandatory that all conduits be routed as shown on the drawings. Other routings facilitating speed and ease of installation may be used, provided the general intent of these specifications is followed and the specific intent of the particular circuit or circuits and the National Electrical Code are not violated; such changes and must be approved by the Engineer before work is done. Contractor shall make full allowances for possible obstructions to these routes, as no extra charges will be allowed for added lengths that may be necessary.
- C. Conduits shall be installed in a neat appearing manner and shall be rigidly secured in place. The use of wooden plugs in masonry or concrete as a base to fasten raceways will not be permitted. Approved anchors only shall be used for this purpose. Exposed conduits shall be installed with runs arranged parallel or perpendicular to walls and ceilings, with rigid angle turns consisting of symmetrical bends, condulets and junction boxes. Bends and offsets shall be held to a minimum. Conduits shall be kept at least six (6") inches from parallel runs of hot piping flues, or other hot objects.

ELECTRICAL MATERIALS AND METHODS

- D. Conduits shall be cut with a hacksaw; ends must be square, threads cut and cleaned before reaming. Conduits must be securely fastened to all outlet and junction boxes with two locknuts and one bushing of approved make, care being exercised to see that full number of threads project through to permit bushings to butt up tight against the end of the conduit, after which the locknuts shall be screwed tight. Conduit shall be joined by approved conduit couplings and shall have ends butted in all cases where couplings are used. Use three piece threaded electrical unions where standard couplings cannot be used. The use of running threads will not be permitted. Where condulets cannot be joined by standard thread couplings, approved type conduit unions shall be used. Connectors and couplings for electric metallic tubing shall be of the set screw type. Couplings for rigid heavy-wall conduit shall be of the threaded type.
- E. Conduit fittings shall be Crouse-Hinds or Appleton grounding type, or approved equal.
- F. Insulated bushings shall be provided for all conductors #4 and larger.
- G. No wire shall be pulled in until the conduit system is complete and plastering dried. This does not include the white finish coat of plaster.
- H. During Construction, all outlet boxes and conduit stub-ins shall be suitably protected against the entrance of foreign material.

2.3 BOXES AND FITTINGS

- A. Boxes and fittings shall conform to requirements of Article 370 of the N.E.C.
- B. Junction and pull boxes required by field conditions shall be installed whether indicated on drawings or not.
- C. The location of outlets not specifically dimensioned on the drawings should be considered as approximate only. The Contractor shall study the general plans with relation to the spaces surrounding each outlet in order that his work fit the work of others so that when fixtures or other fittings are installed, they will be symmetrically located according to design requirements.
- D. Use only galvanized outlet and junction boxes, conduit fittings, covers, and supports for interior wiring and cast fittings and boxes with gasketed covers for exterior wiring. The Contractor shall provide all necessary structural supports for boxes and cabinets. Kindorf or Unistrut channels shall be used where applicable.
- E. Boxes for concealed outlets shall be 4" square by 1-1/2" deep, or larger, with raised device covers as required, except that 2-3/4" deep switch boxes may be used where only one conduit enters a box.
- F. Boxes for concealed ceiling outlets shall be 4" octagonal by 1-1/2" deep, or larger. Boxes in plaster ceilings shall have plaster covers. Fixture outlet boxes shall be equipped with fixture studs secured to the boxes.

- G. Outlet boxes for exposed work shall be 4" square by 1-1/2" deep, or larger. Boxes shall have Appleton 1/2" deep surface metal covers to accommodate the devices indicated, or approved equal.
- H. In walls or ceilings of concrete, tile or other non-combustible material, boxes and fittings shall be so installed that the front edge of the box or fitting will not set back of the finished surface more than 1/4". In walls or ceilings constructed of wood or other combustible material, outlet boxes and fittings shall be set flush with the finished surface.
- I. If a fixture, canopy or pan is used as an outlet box cover, any combustible wall or ceiling finish between the edge of the canopy and the outlet box shall be covered with non-combustible material.
- J. Fixture studs shall be installed in all fixture outlets. In each case, the maximum permissible number of conductors shall be reduced by one.
- K. Appropriate galvanized blank covers, subject to approval of the Engineer, shall be installed over outlet or junction boxes which do not house a device. Multiple devices shall be installed in one-piece multi-gang box with one-piece multi-gang cover plates. On surface mounted switch and receptacle outlets, provide raised covers to permit mounting devices without additional device plates.
- L. For junction and pull boxes, 14 gauge or thicker sheetmetal. Attach covers by means of 1/4" X 20 round head machine screws. In damp locations, provide rubber or neoprene gaskets.
- M. Attention is called to National Electrical Code, Article 370, Paragraph 370-16, Sub-paragraph (a) and (b) relative to allowable number of conductors in outlet boxes. Contractor shall make provisions to prevent overcrowding outlet and junction boxes regardless of number of conductors shown on the drawings at the outlets. There shall be no deviations from Code requirements on this subject.

2.4 CONDUCTORS

- A. All conductors shall be copper and no wire shall be less than #12 AWG except as otherwise noted herein and or indicated on drawings.
- B. All conductors, except as herein noted and/or as indicated on drawings, shall have 600 volt insulation type THHN/THWN. Wiring through channels of continuous surface or suspended fluorescent fixtures shall be Type RHH, or THHN.
- C. Recessed fluorescent fixtures shall be fed with type THHN, or RHH conductors and recessed incandescent fixtures shall be fed with Type THHN conductors.
- D. Conductors #8 and larger shall be stranded. Feeders shall be of the size and type indicated on drawings.
- E. Type MC cable shall not be used.

2.5 GROUNDING

- A. Grounding shall conform to the requirements of Article 250 of the N.E.C.

ELECTRICAL MATERIALS AND METHODS

- B. Contractor shall provide grounding as indicated on drawings, or as required by the modifications to the distribution system.
- C. A grounding conductor shall be provided in all conduit. The grounding conductor shall be green insulated, with a minimum size of #12 AWG, or as indicated on the drawings or per NEC-250. Grounding conductors routed entirely in soil as part of the ground loop shall be bare copper. The grounding conductor connecting the electrical service to the ground system shall be green insulated copper.
- D. Bond jumpers shall be used around concentric or eccentric knockouts on service equipment.
- E. Grounding pole of each polarized receptacle shall be bonded to its outlet box with copper wire and machine or self-tapping screw.

2.6 EQUIPMENT SUPPORTS

All electrical switches, panels, appurtenances, etc., shall be rigidly supported on Unistrut or equal steel framing which shall be securely fastened to walls, floors, ceilings, etc., as required. Details of framing must be submitted to Engineer for approval before installation.

2.7 MOUNTING HEIGHTS

- A. If not otherwise indicated in the drawings, mounting heights to centerline of outlets shall be as follows:
- B. Receptacles - 18" above finished floor except above counter where indicated, or as directed by Owner.
- C. Light Switches - 48" above finished floor.
- D. Panelboard - Not more than 6'-0" from topmost operating handle to floor.
- E. Bracket Fixtures - 8'-0" above floor, or where mounted above exterior door, mirror, medicine cabinet, at a height just sufficient to clear the swing of the door or medicine cabinet.
- F. The above mounting heights may be adjusted as required to permit bottom or top of plate to align with mortar joints in unfinished masonry walls, provided joints are not raked. Where joints are raked, adjust height as required to insure that center of outlet box will be in center of a masonry unit.

2.8 SAFETY SWITCHES

- A. Safety switches shall be of the visible blade, heavy duty knife switch type. They shall be of the fused or unfused type as required. Fused switches shall have positive pressure fuse clips. Switches shall be fully interlocked with provision to neutralize the interlock by a screwdriver while under load without interrupting the circuit. Switches shall be complete with insulated base and pressure or solderless lugs. All switches shall be horsepower rated, capable of breaking stalled-rotor motor current at these ratings. Outdoor locations shall have NEMA Type 3R enclosures, indoor locations shall have NEMA 1 enclosures.

ELECTRICAL MATERIALS AND METHODS

- B. Switches shall have provision for padlocking in the "ON" or "OFF" positions. Safety switches, as indicated on plans, shall be Siemens, General Electric, Cutler-Hammer, or Square D.

2.9 TERMINATIONS

All termination lugs shall be rated 75 degrees C or higher, and shall be compatible with number and size of wires to be terminated.

END OF SECTION - 16050

SECTION 16900 - ELECTRICAL EQUIPMENT CONNECTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Applicable items of all other ELECTRICAL SECTIONS shall apply to this Section.
- B. All Drawings and General Provisions of the Contract, including General Conditions, Supplementary Conditions apply to this Section.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.1 MECHANICAL EQUIPMENT

- A. All power wiring associated with the MECHANICAL SECTION of these Specifications shall be done by this Contractor.
- B. Contractor will furnish and set all motors.
- C. Overload elements in all starters shall be selected according to actual motor nameplate full load current. Responsibility for this coordination shall lie with the Contractor who has furnished the particular starter.
- D. All manual starting switches shall be furnished and installed by the Contractor.
- E. All disconnect switches shall be furnished and installed as indicated and as required by the Contractor.
- F. Refer to MECHANICAL SECTION and to MECHANICAL PLANS for any additional electrical work required.

END OF SECTION - 16900

THE UNIVERSITY OF NEW ORLEANS
Lakefront Campus

Lakefront Campus

1. Administration Bldg.
2. Amphitheater
3. Biomedical Education Ctr.
4. Bienville Hall
5. The Commons
6. Biology Bldg.
7. Bus Stop
8. Campus Police Bldg.
9. Central Utilities Plant
10. Chemistry Sciences Annex
11. Children's Center
12. Computer Center
13. Earl K. Long Library
14. Engineering Bldg.
15. Facility Services
16. Fine Arts Bldg.
17. Geology & Psychology Bldg.
18. Honors L. Little Alumni Ctr.
19. Human Performance Ctr.
20. Information
21. Kirschman Hall
22. Ladine Village
23. Mathematics Bldg.
24. Milneburg Hall
25. Newman Ctr.
26. Oliver St. PN Ctr (TRAC)
27. Performing Arts Ctr.
- 28a. Pontchartrain Hall North
- 28b. Pontchartrain Hall South
29. Provost's Place
30. The Core
31. University Ctr.
32. Recreation & Fitness Ctr.
33. Science Hall

East Campus

- A. East Campus Utilities
- B. Lakefront Arena
- C. Private Hall
- D. Private Park-Baseball
- E. Tennis Complex

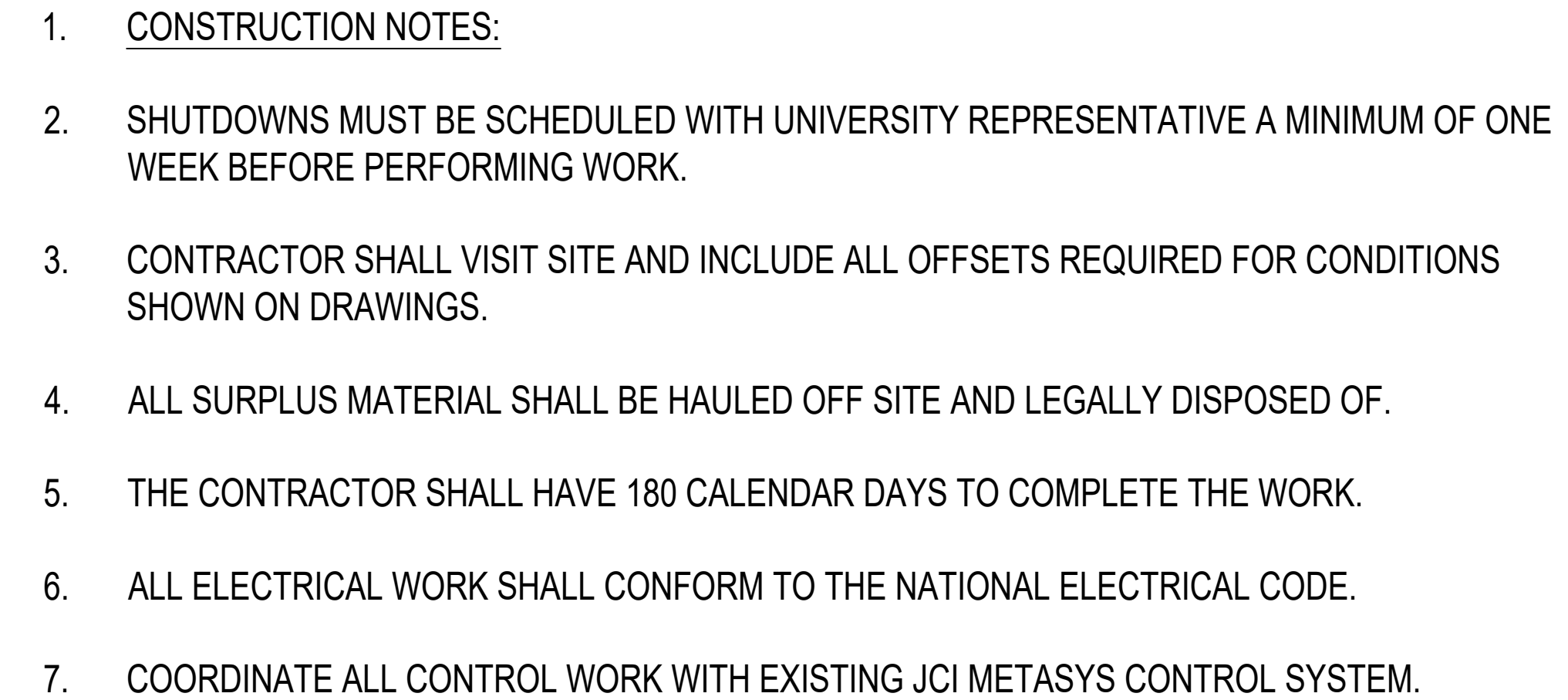
Research & Technology Park

- I. Advanced Technology Ctr.
- II. Ctr. for Energy Research Management
- III. Navy Info Tech Ctr.

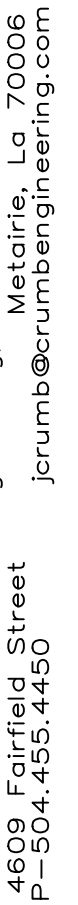
East Campus

- A. East Campus Utilities
- B. Lakefront Arena
- C. Private Hall
- D. Private Park-Baseball
- E. Tennis Complex

CHICHESTER



T1	TITLE SHEET
ME1	3RD FLOOR PLAN - MECHANICAL & ELECTRICAL
ME2	SCHEDULES & DETAILS



University of New Orleans

Lakshmi S. Campos
New Orleans, Louisiana 70148



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ities stated herein are valid on the original drawings only. Contractor shall carefully review all dimensions and conditions shown and report to the engineer any errors, inconsistencies, or omissions discovered.

These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. We will generally administer construction.

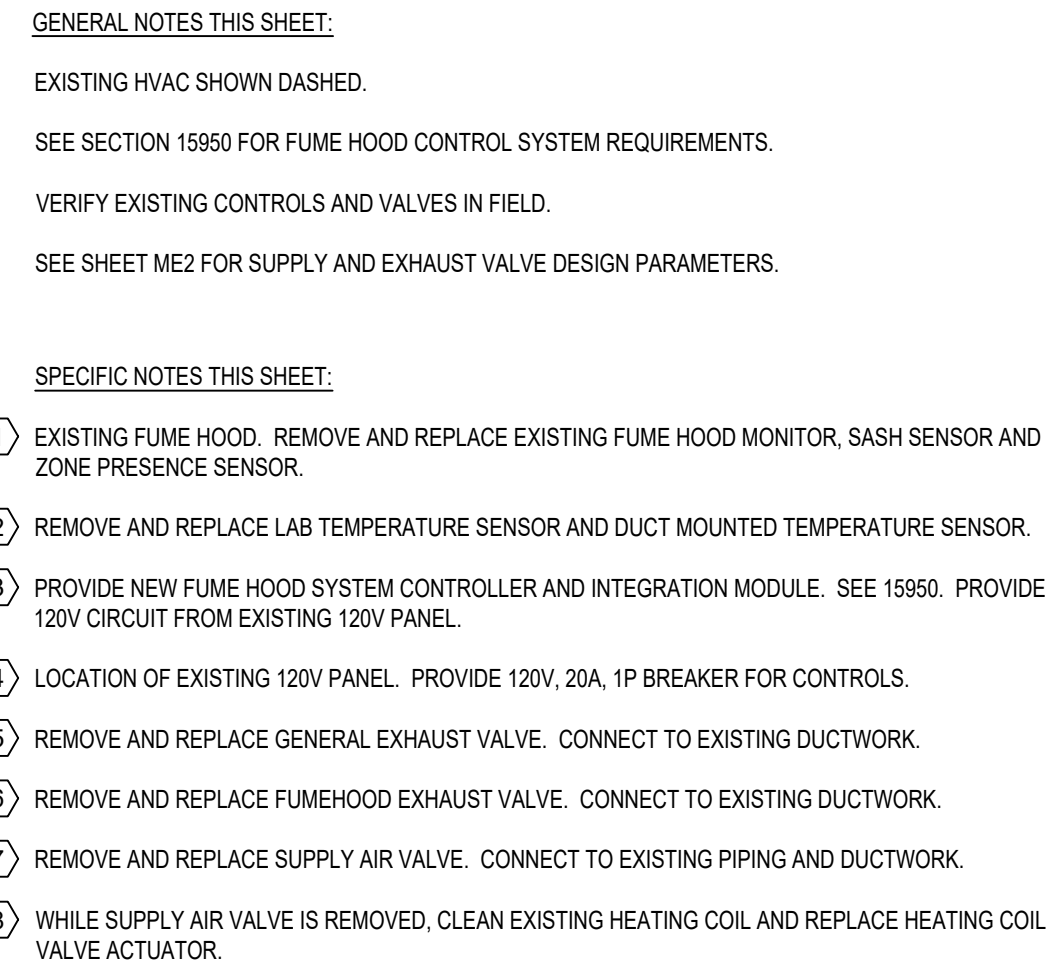
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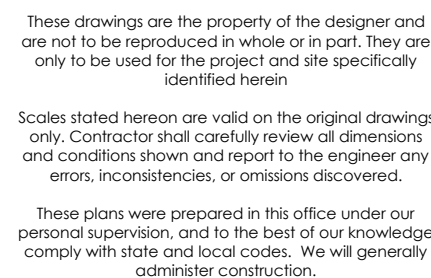
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chemical science annex
fume hood controls replacement

University of New Orleans

Lakefront Campus
New Orleans, Louisiana 70148



date
23 JAN. 2025

sheet

ME1

1 3RD FLOOR PLAN - MECHANICAL & ELECTRICAL
ME1 ME1 3/32"=1'-0"

MECHANICAL		LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
— CHHWS —	CHILLED-HOT WATER SUPPLY	F.D.	FLOOR DRAIN
— CHHWR —	CHILLED-HOT WATER RETURN	(TYP)	TYPICAL
— CWS —	CHILLED WATER SUPPLY	CONN.	CONNECTION
— CWR —	CHILLED WATER RETURN		GATE VALVE
— HWS —	HEATING WATER SUPPLY		CHECK VALVE
— HWR —	HEATING WATER RETURN		VALVE IN VERTICAL RISE
— G —	GAS PIPING		UNION
DN	DOWN		FLOOR DRAIN
	BALL VALVE		PIPING TEE
	CONTROL TEMP. SENSOR		CONTROL FLOW METER
	PRESSURE GAUGE	--- V ---	VENT PIPING
	BALANCING VALVE	— UGV —	UNDER GROUND VENT PIPING
	THERMOMETER		ASME T & P RELIEF
	TEMPERATURE SENSOR		HUMIDITY SENSOR
	CO2 SENSOR		VOLUME DAMPER

ELECTRICAL		LEGEND
SYMBOL	DESCRIPTION	
	DISCONNECT SWITCH W/VISIBLE BLADES	
	STARTER/ DISCONNECT	
	JUNCTION BOX	
	ELECT. MOTOR W/APPROVED DISC. SWITCH	
	CONDUIT / WIRING	

Typical Lab Supply and Exhaust Valve Design Parameters:

- General Exhaust - 60 CFM minimum, 470 CFM maximum - 10"Ø valve
- Hood (2 per lab) - 200 CFM minimum, 1250 CFM maximum - 12"Ø valve
- Supply - 330 minimum, 2310 maximum - (2)12"Ø valves
- Offset - negative 250 CFM
- OVR Minimum - 330 CFM
- OVR Maximum - 620 CFM

General Installation Notes:

- Provide 120 volt power to all controllers from existing 120 volt panel. Refer to ME1 for location.
- Provide 24 volt power to all venturi valve actuators.
- Remove pneumatic tubing from all replaced venturi valves and associated sensors and controls back to the mechanical room and terminate.
- Interface new fumehood controls to existing JCI control system.
- Refer to Section 15950 for complete requirements.

Exhaust and Supply Valve Installation Procedure:

Position the valve in the ductwork according to the manufacturer's guidelines. The valve should be installed in a straight section of duct to ensure accurate airflow measurement. Secure the valve using the provided mounting hardware. Ensure it is firmly attached and aligned correctly.

Connect the existing inlet and outlet ductwork to the valve. Ensure that the connections are airtight to prevent leaks. Use appropriate sealing materials and techniques to secure the ductwork connections.

Connect the valve to the control system using the Phoenix Controls wiring diagram. This may involve connecting power, control signals, and feedback signals. Ensure all electrical connections are secure and comply with local electrical codes.

Follow the manufacturer's instructions to calibrate the valve. This may involve setting the desired airflow setpoints and verifying the valve's response. Test the valve to ensure it operates correctly and maintains the specified airflow rates. Adjust as necessary to achieve the desired performance.

Perform a final inspection to ensure all connections are secure and the valve operates as expected. Check for any leaks or issues that may affect the valve's performance.

Sequence of Operation (refer to 15950 for more information):

EACH LAB SHALL BE PROVIDED WITH A CONTROL PANEL THAT SHALL BE INTERFACED WITH THE MAIN BUILDING CONTROL PANEL. ALL SETPOINTS SHALL BE ADJUSTABLE, ALL INPUTS, OUTPUTS, AND ALARMS SHALL BE MONITORED BY THE MAIN BUILDING CONTROL PANEL. HOOD EXHAUST DAMPER SHALL MAINTAIN A CONSTANT HOOD FACE VELOCITY OF 100 FPM, AS SENSED BY THE SASH POSITION OR THERMAL ANEMOMETER DP SENSOR. THE LAB CONTROL PANEL SHALL SUM THE HOOD'S AND GENERAL ROOM EXHAUST CFM QUANTITIES AND POSITION THE SUPPLY AIR DAMPER TO MAINTAIN A CFM AIR QUANTITY OFFSET BY A FIXED DIFFERENTIAL -250 CFM, RELATIVE TO THE SUM OF THE EXHAUST AIR QUANTITIES. THE ROOM TEMPERATURE SENSOR SHALL MODULATE THE SUPPLY AIR DAMPER AND THE 2-WAY RE-HEAT COIL VALVE. ON A DEMAND FOR COOLING, THE SUPPLY AIR DAMPER SHALL MODULATE OPEN; THE GENERAL EXHAUST DAMPER SHALL ALSO MODULATE OPEN TO A POSITION TO MAINTAIN THE CFM DIFFERENTIAL BETWEEN THE LAB SUPPLY AND TOTAL EXHAUST. ON A DEMAND FOR HEATING, THE SUPPLY AIR DAMPER SHALL MODULATE TO ITS MINIMUM POSITION, THE GENERAL EXHAUST SHALL MODULATE TO MAINTAIN THE DIFFERENTIAL, AND THE RE-HEAT VALVE SHALL MODULATE TO SATISFY THE SETPOINT.

UNO CONTROL GRAPHICS SCOPE

1. Points for all devices added to a JACE shall be in a directory for that individual device
2. All directories will be in a logical order according to their systems.
3. Flags and faucets will be consistent with the campus graphics. Examples are

Temperature = precision 1, percent = precision 0.
4. Point status Effect will be set to color and foreground will be set to Animate, Fixed Simple, White.
5. All binary and analog outputs will be adjustable between override and automatic.
6. Setpoints will be adjustable between setpoint, override and automatic.
7. The directory structure in the JACE will be duplicated in the server.
8. The existing BAS graphics package will be utilized. Other graphics can be used upon approval.
9. Each building will have a home page.
10. Each home page will include hyperlinks to each system.
11. The only link back to the main login page will be on the building home page.
12. Floor plans will be used and will include zone temperature with hyperlinks to a popup window for VAV type devices.
13. Floor plans will also include links to all related equipment such as air handling units and fume hoods.
14. All AHU graphics will include a summary of all related devices or subsystems and the device name will have a hyperlink to a popup for each VAV type device.
15. Trends will be added to all analog points on air handlers, piping and subsystems.
16. Trends will be displayed in a popup window.
17. Equipment status and other critical alarms will be added to the horn alarm class in the server.
18. All trends and alarms will be named according to building, system and point.
19. Alarms will include a text description of the alarm.
20. Schedules for equipment will be added to the server and displayed on the graphic.
21. All processes such as reset schedules will be displayed on the graphic.
22. Piping graphics shall be representative of actual field piping.

GENERAL HVAC NOTES:

1. DUCT SIZES SHOWN ARE FREE AREA SIZES. SEE SPECIFICATIONS FOR DUCT MATERIALS AND INSULATION.
2. ALL DUCTWORK SHALL BE EXTERNALLY WRAPPED UNLESS NOTED OTHERWISE. INTERNALLY LINE ALL DUCTWORK FOR FIRST 9' OF SUPPLY AND RETURN FROM UNIT. EXPOSED RECTANGULAR DUCTWORK SHALL BE INTERNALLY LINED. ALL RETURN PLENUMS AND TRANSFER DUCTS SHALL BE INTERNALLY LINED.
3. PROVIDE VOLUME DAMPERS AT ALL TAPS INTO MAIN DUCT RUNS. PROVIDE VOLUME DAMPERS AT MAIN RETURN AND OUTSIDE AIR DUCTS.
4. INSULATE THE BACK OF ALL DIFFUSERS.
5. NO FLEX DUCT RUN SHALL EXCEED 8 FEET.
6. FLEX DUCT RUN OUTS TO DIFFUSERS SHALL BE SIZED SAME AS DIFFUSER NECK SIZE. FASTEN THE INNER HELIX AND OUTER JACKET OF FLEX DUCTS TO DIFFUSERS AND DUCTS WITH NYLON TIE WRAPS.
7. PROVIDE FLEXIBLE CONNECTIONS AT SUPPLY AND RETURN CONNECTIONS TO AC UNITS.
8. TOILET AND JANITOR EXHAUST FANS TO BE INTERLOCKED WITH ROOM LIGHT SWITCH.
9. ALL NEW DUCTWORK SHALL BE RUN ABOVE CEILINGS AND TIGHT TO STRUCTURE. COORDINATE WITH OTHER TRADES AND MAKE OFFSETS WHERE REQUIRED. PROVIDE DUCTWORK SHOP DRAWINGS. RUN DUCTWORK THROUGH TRUSSES WHERE SPACE IS LIMITED.
10. PROVIDE ACCESS TO ALL EQUIPMENT, INCLUDING ACCESS PANELS WHERE REQUIRED.
11. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE SUPPORTS, DUCTWORK, PIPING, CONTROLS, ETC AS REQUIRED.
12. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE WALLS AND PROVIDE FIRE DAMPERS IN ALL RATED WALLS AND FLOORS. PROVIDE FIRE DAMPERS IN ALL OUTSIDE AIR INTAKES.
13. PROVIDE DUCT DETECTORS IN THE SUPPLY AND RETURN FOR ALL AIR UNITS 2000 CFM AND OVER. PROVIDE FIRESTATS FOR ALL FANS 800 CFM AND OVER.
14. PROVIDE THERMOSTATS AND CONTROL WIRING FOR ALL AC AND FAN SYSTEMS SHOWN ON DRAWINGS.
15. PROVIDE TEST AND BALANCE FOR ALL AC AND FAN SYSTEMS.
16. PROVIDE INSULATED PLENUM BOXES (MINIMUM 12" DEEP UNLESS OTHERWISE NOTED) AT ALL LOUVERS FOR DUCT CONNECTIONS.
17. PROVIDE INSULATED CONDENSATE DRAIN PIPING FOR ALL AC SYSTEMS.
18. ALL REFRIGERATION PIPING SHALL BE SIZED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. INSULATE ALL PIPING FOR HEAT PUMP SYSTEMS. FOR LONG REFRIGERANT PIPING RUNS, CONSULT EQUIPMENT MANUFACTURER FOR SPECIFIC INSTALLATION REQUIREMENTS.
19. OUTSIDE AIR INTAKES SHALL BE SEPARATED FROM EXHAUST OUTLETS AND VENT STACK BY 10'. OFFSET AS REQUIRED.

GENERAL ELECTRICAL NOTES:

1. REFER TO ARCHITECT'S FLOOR PLANS AND ARCHITECT'S ELEVATIONS FOR RECEPTACLE AND OUTLET LOCATIONS. PROVIDE ADDITIONAL RECEPTACLES AS REQUIRED.
2. PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT. DO NOT SHARE NEUTRAL CONDUCTORS.
3. ALL CONDUIT SHALL BE 1/2" WITH 2-#12 AWG & 1-#12 GRD UNLESS NOTED OTHERWISE. FOR CONDUIT RUNS LONGER THAN 75', UPSIZE CONDUCTORS TO #10 AWG.
4. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ART. 250.
5. PROVIDE POWER FOR ALL EQUIPMENT SHOWN ON MECHANICAL AND ARCHITECTURAL FLOOR PLANS. COORDINATE EXACT REQUIREMENTS WITH SUBMITTALS.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE NEC.
7. ALL TOILET ROOM, KITCHEN, EQUIPMENT ROOM AND RECEPTACLES WITHIN 6' OF A PLUMBING FIXTURE SHALL BE GFCI TYPE. EXTERIOR RECEPTACLES SHALL WEATHERPROOF GFCI.
8. PROVIDE RECEPTACLES NEAR AC EQUIPMENT FOR SERVICING AS REQUIRED BY THE NEC.

chemical science annex
fume hood controls replacement

University of New Orleans

Lakefront Campus
New Orleans, Louisiana 70148



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Scales stated hereon are valid on the original drawings only. Contractor shall carefully review all dimensions and conditions shown and report to the engineer any errors, inconsistencies, or omissions discovered.

These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. We will generally administer construction.

PROJ. #.	revisions

date
23 JAN. 2025

sheet

ME2

SCHEDULES & DETAILS
NO SCALE



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