

# University of South Carolina Upstate

# UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS

150 Gramling Drive Spartanburg, SC 29303

STATE PROJECT NO.: H34-9517 JCS PROJECT NO: 18104

**December 4, 2020** 



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# **SE-310**

# INVITATION FOR DESIGN-BID-BUILD CONSTRUCTION SERVICES

AGENCY: University of South Carolina (UofSC)	
PROJECT NAME: Upstate Information Resource Center Reno	vations
PROJECT NUMBER: H34-9517/CP00005883 CONSTRUCT	
PROJECT LOCATION: 150 Gramling Drive, Spartanburg SC	
DESCRIPTION OF PROJECT/SERVICES: The Project cons	
including lighting, power, fire alarm and HVAC. New ceilings,	
included. Small and Minority Business participation is strongly e	encouraged.
BID/SUBMITTAL DUE DATE: 1/14/2021 TIM	IE: 1:00PM NUMBER OF COPIES: 1
PROJECT DELIVERY METHOD: Design-Bid-Build	
AGENCY PROJECT COORDINATOR: Aimee B. Rish	
EMAIL: arish@fmc.sc.edu	<b>TELEPHONE:</b> 803.777.2261
DOCUMENTS MAY BE OBTAINED FROM: http://purchasi	ing.sc.edu "Solicitations and Awards/Facilities Construction"
BID SECURITY IS REQUIRED IN AN AMOUNT NOT LES	SS THAN 5% OF THE BASE BID.
PERFORMANCE AND LABOR & MATERIAL PAYMENT	<b>BONDS:</b> The successful Contactor will be required to provide
Performance and Labor and Material Payment Bonds, each in the	amount of 100% of the Contract Price.
DOCUMENT DEPOSIT AMOUNT: \$\text{N/A}\text{IS}	S DEPOSIT REFUNDABLE Yes $\square$ No $\square$ N/A $\boxtimes$
Bidders must obtain Bidding Documents/Plans from the above listed source(s) to	
any other source do so at their own risk. All written communications with officia Agency WILL NOT accept Bids sent via email.	I plan noiders & bidders will be via email or website posting.
rigorey WIBE 1001 accept Blas sont via cinan.	
All questions & correspondence concerning this Invitation shall be addressed to t	the A/E.
A/E NAME: Jumper Carter Sease Architects	
A/E CONTACT: Mr. Darryn Bouknight	
EMAIL: dbouknight@jcsarchitects.com	TELEPHONE: 803.791.1020
PRE-BID CONFERENCE: Yes No	MANDATORY ATTENDANCE: Yes ☐ No ⊠
<b>PRE-BID DATE:</b> 12/17/2020	TIME: 11:00AM
PRE-BID PLACE: Conference Call 800.753.1965 A	Access Code 7777162. Site Visit at 11:30am on site. Use of
attendee provided face mask is mandatory. Six-foot soc	ial distance rules fully apply.
BID OPENING PLACE: Bid Opening will be limited to teleco	nference only. Telephone 800.753.1965 Access code 7777162
BID DELIVERY ADDRESSES:	
HAND-DELIVERY:	MAIL SERVICE:
Attn: Aimee B. Rish "Bid Enclosed H34-9517/CP00005883"	Attn: Aimee B. Rish "Bid Enclosed H34-9517/CP00005883"
1600 Hampton Street Suite 606	1600 Hampton Street Suite 606
Columbia, SC 29208	Columbia, SC 29208
IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICA'	
APPROVED BY:  (OSE Project Manager)	DATE:
(ODD 1 Toject Hunuger)	

# South Carolina Division of Procurement Services, Office of State Engineer Version of $\stackrel{\text{\tiny $\sim$}}{=} AIA^{^{\!\circ}}$ Document A701 $^{\text{\tiny $\sim$}}$ — 2018

Instructions to Bidders

This version of AIA Document A701<sup>™</sup>–2018 is modified by the South Carolina Division of Procurement Services, Office of State Engineer ("SCOSE"). Publication of this version of AIA Document A701–2018 does not imply the American Institute of Architects' endorsement of any modification by SCOSE. A comparative version of AIA Document A701–2018 showing additions and deletions by SCOSE is available for review on the SCOSE Web site.

Cite this document as "AIA Document A701™— 2018, Instructions to Bidders — SCOSE Version," or "AIA Document A701™—2018 — SCOSE Version."

# South Carolina Division of Procurement Services, Office of State Engineer Version of MAIA Document A701™ – 2018

#### Instructions to Bidders

for the following Project: (Name, State Project Number, location, and detailed description)
UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS
H34-9517

#### THE OWNER:

(Name, legal status, address, and other information)
University of South Carolina
1300 Pickens Street
Columbia, SC 29208

150 Gramling Drive, Spartanburg, SC 29303

The Owner is a Governmental Body of the State of South Carolina as defined by S.C. Code Ann. § 11-35-310.

#### THE ARCHITECT:

(Name, legal status, address, and other information)
Jumper Carter Sease Architects, PA
412 Meeting Street
West Columbia, SC 29169

This version of AIA Document A701-2018 is modified by the South Carolina Division of Procurement Services, Office of State Engineer. Publication of this version of AIA Document A701 does not imply the American Institute of Architects' endorsement of any modification by South Carolina Division of Procurement Services, Office of State Engineer. A comparative version of AIA Document A701-2018 showing additions and deletions by the South Carolina Division of Procurement Services, Office of State Engineer is available for review on South Carolina state Web site.

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

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#### ARTICLE 1 DEFINITIONS

- § 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.
- § 1.1.1 Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA Document A101-2017 Standard Form of Agreement Between Owner and Contractor, SCOSE Version. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA Document A201-2017 General Conditions of the Contract for Construction, SCOSE Version.
- § 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.
- § 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.
- § 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- § 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.
- § 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.
- § 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.
- § 1.8 A Bidder is a person or entity who submits a Bid.
- § 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

#### ARTICLE 2 BIDDER'S REPRESENTATIONS

- § 2.1 By submitting a Bid, the Bidder represents that:
  - .1 the Bidder has read and understands the Bidding Documents:
  - .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
  - .3 the Bid complies with the Bidding Documents;
  - .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, has correlated the Bidder's observations with the requirements of the Proposed Contract Documents, and accepts full responsibility for any pre-bid existing conditions that would affect the Bid that could have been ascertained by a site visit. As provided in S.C. Code Ann. Reg. 19-445.2042(B), a bidder's failure to attend an advertised pre-bid conference will not excuse its responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the State;
  - .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
  - the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

#### § 2.2 Certification of Independent Price Determination

§ 2.2.1 GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SC CODE OF LAWS §16-9-10 AND OTHER APPLICABLE LAWS.

- § 2.2.2 By submitting a Bid, the Bidder certifies that:
  - .1 The prices in this Bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to:
    - .1 those prices;
    - .2 the intention to submit a Bid; or
    - .3 the methods or factors used to calculate the prices offered.
  - .2 The prices in this Bid have not been and will not be knowingly disclosed by the Bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
  - .3 No attempt has been made or will be made by the Bidder to induce any other concern to submit or not to submit a Bid for the purpose of restricting competition.
- § 2.2.3 Each signature on the Bid is considered to be a certification by the signatory that the signatory:
  - 1 Is the person in the Bidder's organization responsible for determining the prices being offered in this Bid, and that the signatory has not participated and will not participate in any action contrary to Section 2.2.2 of this certification; or
  - .2 Has been authorized, in writing, to act as agent for the Bidder's principals in certifying that those principals have not participated, and will not participate in any action contrary to Section 2.2.2 of this certification [As used in this subdivision, the term "principals" means the person(s) in the Bidder's organization responsible for determining the prices offered in this Bid];
  - .3 As an authorized agent, does certify that the principals referenced in Section 2.2.3.2 of this certification have not participated, and will not participate, in any action contrary to Section 2.2.2 of this certification; and
  - .4 As an agent, has not personally participated, and will not participate, in any action contrary to Section 2.2.2 of this certification.
- § 2.2.4 If the Bidder deletes or modifies Section 2.2.2.2 of this certification, the Bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

#### § 2.2.5 Drug Free Workplace Certification

By submitting a Bid, the Bidder certifies that, if awarded a contract, Bidder will comply with all applicable provisions of The Drug-free Workplace Act, S.C. Code Ann. 44-107-10, et seq.

#### § 2.2.6 Certification Regarding Debarment and Other Responsibility Matters

- § 2.2.6.1 By submitting a Bid, Bidder certifies, to the best of its knowledge and belief, that:
  - 1 Bidder and/or any of its Principals-
    - .1 Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;
    - .2 Have not, within a three-year period preceding this Bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and
    - .3 Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in Section 2.2.6.1.1.2 of this provision.
  - .2 Bidder has not, within a three-year period preceding this Bid, had one or more contracts terminated for default by any public (Federal, state, or local) entity.
  - .3 "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).
- § 2.2.6.2 Bidder shall provide immediate written notice to the Procurement Officer if, at any time prior to contract award, Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

- § 2.2.6.3 If Bidder is unable to certify the representations stated in Section 2.2.6.1, Bidder must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Bidder's responsibility. Failure of the Bidder to furnish additional information as requested by the Procurement Officer may render the Bidder non-responsible.
- § 2.2.6.4 Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by Section 2.2.6.1 of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- § 2.2.6.5 The certification in Section 2.2.6.1 of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

#### § 2.2.7 Ethics Certificate

By submitting a Bid, the Bidder certifies that the Bidder has and will comply with, and has not, and will not, induce a person to violate Title 8, Chapter 13 of the SC Code of Laws, as amended (Ethics Act). The following statutes require special attention: S.C. Code Ann. §8-13-700, regarding use of official position for financial gain; S.C. Code Ann. §8-13-705, regarding gifts to influence action of public official; S.C. Code Ann. §8-13-720, regarding offering money for advice or assistance of public official; S.C. Code Ann. §8-13-755 and §8-13-760, regarding restrictions on employment by former public official; S.C. Code Ann. §8-13-775, prohibiting public official with economic interests from acting on contracts; S.C. Code Ann. §8-13-790, regarding recovery of kickbacks; S.C. Code Ann. §8-13-1150, regarding statements to be filed by consultants; and S.C. Code Ann. §8-13-1342, regarding restrictions on contributions by contractor to candidate who participated in awarding of contract. The State may rescind any contract and recover all amounts expended as a result of any action taken in violation of this provision. If the contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, the contractor shall, if required by law to file such a statement, provide the statement required by S.C. Code Ann. §8-13-1150 to the Procurement Officer at the same time the law requires the statement to be filed.

#### § 2.2.8 Restrictions Applicable To Bidders & Gifts

Violation of these restrictions may result in disqualification of your Bid, suspension or debarment, and may constitute a violation of the state Ethics Act.

- § 2.2.8.1 After issuance of the solicitation, Bidder agrees not to discuss this procurement activity in any way with the Owner or its employees, agents or officials. All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed.
- § 2.2.8.2 Unless otherwise approved in writing by the Procurement Officer, Bidder agrees not to give anything to the Owner, any affiliated organizations, or the employees, agents or officials of either, prior to award.
- § 2.2.8.3 Bidder acknowledges that the policy of the State is that a governmental body should not accept or solicit a gift, directly or indirectly, from a donor if the governmental body has reason to believe the donor has or is seeking to obtain contractual or other business or financial relationships with the governmental body. SC Regulation 19-445.2165(C) broadly defines the term donor.

#### § 2.2.9 Open Trade Representation

By submitting a Bid, the Bidder represents that Bidder is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in S.C. Code Ann. §11-35-5300.

#### ARTICLE 3 BIDDING DOCUMENTS

#### § 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

§ 3.1.2 Any required deposit shall be refunded to all plan holders who return the paper Bidding Documents in good condition within ten (10) days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

#### § 3.1.3 Reserved

- § 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.
- § 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.
- § 3.1.6 All persons obtaining Bidding Documents from the issuing office designated in the advertisement shall provide that office with Bidder's contact information to include the Bidder's name, telephone number, mailing address, and email address.

#### § 3.2 Modification or Interpretation of Bidding Documents

- § 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2. Failure to do so will be at the Bidder's risk. Bidder assumes responsibility for any patent ambiguity that Bidder does not bring to the Architect's attention prior to Bid Opening.
- § 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least ten (10) days prior to the date for receipt of Bids.
- § 3.2.3 Modifications, corrections, changes, and interpretations of the Bidding Documents shall be made by Addendum. Modifications, corrections, changes, and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.
- § 3.2.4 As provided in S.C. Code Ann. Reg. 19-445.2042(B), nothing stated at the Pre-bid conference shall change the Bidding Documents unless a change is made by Addendum.

#### § 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution. Where "brand name or equal" is used in the Bidding Documents, the listing description is not intended to limit or restrict competition.

#### § 3.3.2 Substitution Process

- § 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten (10) days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.
- § 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.
- § 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.
- § 3.3.2.4 No request to substitute materials, products, or equipment for materials, products, or equipment described in the Bidding Documents and no request for addition of a manufacturer or supplier to a list of approved manufacturers or suppliers in the Bidding Documents will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten (10) days prior to the date for receipt of Bids established in the invitation to bid.

Any subsequent extension of the date for receipt of Bids by addendum shall not extend the date for receipt of such requests unless the addendum so specifies. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the Work of other contracts that incorporation of the proposed substitution would require, shall be included.

- § 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
- § 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.
- § 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

#### § 3.4 Addenda

- § 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.
- § 3.4.2 Addenda will be available where Bidding Documents are on file.
- § 3.4.3 Addenda will be issued at least five (5) business days before the day of the Bid Opening, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids. A business day runs from midnight to midnight and excludes weekends and state and federal holidays.
- § 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.
- § 3.4.5 When the date for receipt of Bids is to be postponed and there is insufficient time to issue an Addendum prior to the original Bid Date, the Owner will notify prospective Bidders by telephone or other appropriate means with immediate follow up with an Addendum. This Addendum will verify the postponement of the original Bid Date and establish a new Bid Date. The new Bid Date will be no earlier than the fifth (5th) business day after the date of issuance of the Addendum postponing the original Bid Date.
- § 3.4.6 If an emergency or unanticipated event interrupts normal government processes so that Bids cannot be received at the government office designated for receipt of Bids by the exact time specified in the solicitation, the time specified for receipt of Bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Addendum may be issued to reschedule Bid Opening. If state offices are closed in the county in which Bids are to be received at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference. Bidders shall visit <a href="https://www.scemd.org/closings/">https://www.scemd.org/closings/</a> for information concerning closings.

#### ARTICLE 4 BIDDING PROCEDURES

#### § 4.1 Preparation of Bids

- § 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.
- § 4.1.2 All blanks on the Bid Form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.
- § 4.1.3 Sums shall be expressed in numbers.
- § 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid. Bidder shall not make stipulations or qualify his Bid in any manner not permitted on the Bid Form. An incomplete Bid or information not requested that is written on or attached to the Bid Form that could be considered a qualification of the Bid, may be cause for rejection of the Bid.
- § 4.1.5 All requested Alternates shall be bid. The failure of the Bidder to indicate a price for an Alternate shall render the Bid non-responsive. Indicate the change to the Base Bid by entering the dollar amount and marking, as appropriate, the box for "ADD TO" or "DEDUCT FROM". If no change in the Base Bid is required, enter "ZERO" or "No Change".

- § 4.1.6 Pursuant to S.C. Code Ann. § 11-35-3020(b)(i), as amended, Section 7 of the Bid Form sets forth a list of proposed subcontractors for which the Bidder is required to identify those subcontractors the Bidder will use to perform the work listed. Bidder must follow the instructions in the Bid Form for filling out this section of the Bid Form. Failure to properly fill out Section 7 may result in rejection of Bidder's bid as non-responsive.
- § 4.1.7 Contractors and subcontractors listed in Section 7 of the Bid Form who are required by the South Carolina Code of Laws to be licensed, must be licensed as required by law at the time of bidding.
- § 4.1.8 Each copy of the Bid shall state the legal name and legal status of the Bidder. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract.
- § 4.1.9 A Bidder shall incur all costs associated with the preparation of its Bid.

#### § 4.2 Bid Security

- § 4.2.1 If required by the invitation to bid, each Bid shall be accompanied by a bid security in an amount of not less than five percent of the Base Bid. The bid security shall be a bid bond or a certified cashier's check.
- § 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.
- § 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bid Bond shall:
  - .1 be issued by a surety company licensed to do business in South Carolina;
  - be issued by a surety company having, at a minimum, a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty", which company shows a financial strength rating of at least five (5) times the contract price.
  - .3 be enclosed in the bid envelope at the time of Bid Opening, either in paper copy or as an electronic bid bond authorization number provided on the Bid Form and issued by a firm or organization authorized by the surety to receive, authenticate and issue binding electronic bid bonds on behalf the surety.
- § 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and performance and payment bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected.
- § 4.2.5 By submitting a Bid Bond via an electronic bid bond authorization number on the Bid Form and signing the Bid Form, the Bidder certifies that an electronic bid bond has been executed by a Surety meeting the standards required by the Bidding Documents and the Bidder and Surety are firmly bound unto the State of South Carolina under the conditions provided in this Section 4.2.

#### § 4.3 Submission of Bids

- § 4.3.1 A Bidder shall submit its Bid as indicated below:
- § 4.3.2 All paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall, unless hand delivered by the Bidder, be addressed to the Owner's designated purchasing office as shown in the invitation to bid. The envelope shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, or special delivery service (UPS, Federal Express, etc.), the sealed envelope shall be labelled "SEALED BID ENCLOSED" on the face thereof. Bidders hand delivering their Bids shall deliver Bids to the place of the Bid Opening as shown in the invitation for bids. Whether or not Bidders attend the Bid Opening, they shall give their Bids to the Owner's Procurement Officer or his/her designee as shown in the invitation to bid prior to the time of the Bid Opening.
- § 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

1

- § 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.
- § 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted. Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.
- § 4.3.6 The official time for receipt of Bids will be determined by reference to the clock designated by the Owner's Procurement Officer or his/her designee. The Procurement Officer conducting the Bid Opening will determine and announce that the deadline has arrived and no further Bids or bid modifications will be accepted. All Bids and bid modifications in the possession of the Procurement Officer at the time the announcement is completed will be timely, whether or not the bid envelope has been date/time stamped or otherwise marked by the Procurement Officer.

#### § 4.4 Modification or Withdrawal of Bid

- § 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid
- § 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

#### ARTICLE 5 CONSIDERATION OF BIDS

#### § 5.1 Opening of Bids

Bids received on time will be publicly opened and read aloud. The Owner will not read aloud Bids that the Owner determines, at the time of opening, to be non-responsive.

- § 5.1.1 At Bid Opening, the Owner will announce the date and location of the posting of the Notice of Intend to Award. If the Owner determines to award the Project, the Owner will, after posting a Notice of Intend to Award, send a copy of the Notice to all Bidders.
- § 5.1.2 The Owner will send a copy of the final Bid Tabulation to all Bidders within ten (10) working days of the Bid Opening.
- § 5.1.3 If only one Bid is received, the Owner will open and consider the Bid.

#### § 5.2 Rejection of Bids

- § 5.2.1 The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.
- § 5.2.2 The reasons for which the Owner will reject Bids include, but are not limited to:
  - .1 Failure by a Bidder to be represented at a Mandatory Pre-Bid Conference or site visit;
  - .2 Failure to deliver the Bid on time;
  - .3 Failure to comply with Bid Security requirements, except as expressly allowed by law;
  - .4 Listing an invalid electronic Bid Bond authorization number on the Bid Form;
  - .5 Failure to Bid an Alternate, except as expressly allowed by law;
  - .6 Failure to list qualified subcontractors as required by law;
  - .7 Showing any material modification(s) or exception(s) qualifying the Bid;
  - .8 Faxing a Bid directly to the Owner or Owner's representative; or
  - .9 Failure to include a properly executed Power-of-Attorney with the Bid Bond.
- § 5.2.3 The Owner may reject a Bid as nonresponsive if the prices bid are materially unbalanced between line items or sub-line items. A Bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the Bid

will result in the lowest overall cost to the Owner even though it may be the low evaluated Bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

#### § 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed available funds. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

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

#### ARTICLE 6 POST-BID INFORMATION

#### § 6.1 Contractor's Responsibility

Owner will make a determination of Bidder's responsibility before awarding a contract. Bidder shall provide all information and documentation requested by the Owner to support the Owner's evaluation of responsibility. Failure of Bidder to provide requested information is cause for the Owner, at its option, to determine the Bidder to be non-responsible.

#### § 6.2 Reserved

#### § 6.3 Submittals

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

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

#### § 6.4 Posting of Intent To Award

The Notice of Intent to Award will be posted at the following location:

Room or Area of Posting: Suite 606

Building Where Posted: U of SC Purchasing Department

Address of Building: 1600 Hampton Street, Columbia SC 29208

WEB site address (if applicable): http://purchasing.sc.edu

**Posting date will be announced at Bid Opening.** In addition to posting the Notice, the Owner will promptly send all responsive Bidders a copy of the Notice of Intent to Award and the final bid tabulation

#### § 6.5 Protest of Solicitation or Award

§ 6.5.1 If you are aggrieved in connection with the solicitation or award of a contract, you may be entitled to protest, but only as provided in S.C. Code Ann. § 11-35-4210. To protest a solicitation, you must submit a protest within fifteen (15) days of the date the applicable solicitation document is issued. To protest an award, you must (i) submit notice if your intent to protest within seven (7) business days of the date the award notice is posted, and (ii) submit your actual protest within fifteen (15) days of the date the award notice is posted. Days are calculated as provided in Section 11-35-310(13). Both protests and notices of intent to protest must be in writing and must be received by the State Engineer within the time provided. The grounds of the protest and the relief requested must be set forth with enough particularity to give notice of the issues to be decided.

- § 6.5.2 Any protest must be addressed to the CPO, Office of State Engineer, and submitted in writing:
  - by email to protest-ose@mmo.sc.gov,
  - 2 by facsimile at 803-737-0639, or
  - .3 by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201.

By submitting a protest to the foregoing email address, you (and any person acting on your behalf) consent to receive communications regarding your protest (and any related protests) at the e-mail address from which you sent your protest.

- § 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid.
- § 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the state of South Carolina.
- § 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of 100% of the Contract Sum.

#### § 7.2 Time of Delivery of Contract, Certificates of Insurance, and Form of Bonds

- § 7.2.1 Following expiration of the protest period, the Owner will forward the Contract for Construction to the Bidder for signature. The Bidder shall return the fully executed Contract for Construction to the Owner within seven (7) days. The Bidder shall deliver the required bonds and certificate of insurance to the Owner not later than three (3) days following the date of execution of the Contract. Failure to deliver these documents as required shall entitle the Owner to consider the Bidder's failure as a refusal to enter into a contract in accordance with the terms and conditions of the Bidder's Bid and to make claim on the Bid Security for re-procurement cost.
- § 7.2.2 Unless otherwise provided, the bonds shall be written on the Performance Bond and Payment Bond forms included in the Bid Documents.
- § 7.2.3 The bonds shall be dated on or after the date of the Contract.

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

#### ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

- § 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:
  - .1 AIA Document A101™—2017, Standard Form of Agreement Between Owner and Contractor, SCOSE Version.
  - .2 AIA Document A101<sup>TM</sup>\_2017, Exhibit A, Insurance and Bonds, SCOSE Version.
  - .3 AIA Document A201<sup>TM</sup>—2017, General Conditions of the Contract for Construction, SCOSE Version.
  - .4 AIA Document E203<sup>TM</sup>–2013, Building Information Modeling and Digital Data Exhibit
  - .5 Drawings

.6

Number	Title	Date	
See Index of Drawings in			
Project Manual			
Specifications			
Section	Title	Date	Pages
See Table of Contents in .			J
Project Manual			

.7	Addenda:	
	Number	Date Pages
.8		nibits:  I boxes that apply and include appropriate information identifying the exhibit where required.)  IA Document E204 <sup>TM</sup> _2017, Sustainable Projects Exhibit, dated as indicated below:
	Т	he Sustainability Plan:
	S	upplementary and other Conditions of the Contract:
.9		uments listed below: any additional documents that are intended to form part of the Proposed Contract Documents.)

#### ARTICLE 9 Miscellaneous

#### § 9.1 Nonresident Taxpayer Registration Affidavit Income Tax Withholding Important Tax Notice - Nonresidents Only

- § 9.1.1 Withholding Requirements for Payments to Nonresidents: SC Code of Laws §12-8-550 requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed \$10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit Income Tax Withholding, Form I-312 to the person letting the contract.
- § 9.1.2 For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department's website at: <a href="https://www.sctax.org">www.sctax.org</a>
- § 9.1.3 This notice is for informational purposes only. This Owner does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898-5383.

PLEASE SEE THE "NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING" FORM (Available through SC Department of Revenue).

#### § 9.2 Submitting Confidential Information

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§ 9.2.1 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that the Bidder contends contains

information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged & confidential, as that phrase is used in SC Code of Laws §11-35-410.

- § 9.2.2 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the words "TRADE SECRET" every page, or portion thereof, that the Bidder contends contains a trade secret as that term is defined by SC Code of Laws §39-8-20.
- § 9.2.3 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the word "PROTECTED" every page, or portion thereof, that the Bidder contends is protected by SC Code of Laws §11-35-1810.
- § 9.2.4 All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire Bid as confidential, trade secret, or protected! If your Bid, or any part thereof, is improperly marked as confidential or trade secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire
- § 9.2.5 By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, & documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, & (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure.
- § 9.2.6 In determining whether to release documents, the State will detrimentally rely on the Bidders' marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED".
- § 9.2.7 By submitting a response, the Bidder agrees to defend, indemnify & hold harmless the State of South Carolina, its officers & employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Bidder marked as "confidential" or "trade secret" or "PROTECTED".

#### § 9.3 Solicitation Information From Sources Other Than Official Source

South Carolina Business Opportunities (SCBO) is the official state government publication for State of South Carolina solicitations. Any information on State agency solicitations obtained from any other source is unofficial and any reliance placed on such information is at the Bidder's sole risk and is without recourse under the South Carolina Consolidated Procurement Code.

#### § 9.4 Builder's Risk Insurance

Bidders are directed to Exhibit A of the AIA Document A101, 2017 SCOSE Version, which, unless provided otherwise in the Bid Documents, requires the contractor to provide builder's risk insurance on the project.

#### § 9.5 Tax Credit For Subcontracting With Minority Firms

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- § 9.5.1 Pursuant to S.C. Code Ann. §12-6-3350, taxpayers, who utilize certified minority subcontractors, may take a tax credit equal to 4% of the payments they make to said subcontractors. The payments claimed must be based on work performed directly for a South Carolina state contract. The credit is limited to a maximum of fifty thousand dollars annually. The taxpayer is eligible to claim the credit for 10 consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return.
- § 9.5.2 Taxpayers must maintain evidence of work performed for a State contract by the minority subcontractor. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888.

§ 9.5.3 The subcontractor must be certified as to the criteria of a "Minority Firm" by the Governor's Office of Small and Minority Business Assistance (OSMBA). Certificates are issued to subcontractors upon successful completion of the certification process. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. Reference: S.C. Code Ann. §11-35-5010 – Definition for Minority Subcontractor & S.C. Code Ann. §11-35-5230 (B) – Regulations for Negotiating with State Minority Firms.

§ 9.6 Other Special Conditions Of The Work

## **Bid Bond**

#### **CONTRACTOR:**

(Name, legal status and address)

#### SURETY:

(Name, legal status and principal place of business)

#### OWNER:

(Name, legal status and address)
University of South Carolina
1300 Pickens Street
Columbia, SC 29208

#### **BOND AMOUNT: \$**

#### PROJECT:

(Name, location or address, and Project number, if any) Upstate Information Resource Center Renovations 150 Gramling Drive, Spartanburg, SC 29303 State Project Number H34-9517

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

#### ADDITIONS AND DELETIONS:

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

		(Contractor as Principal)	(Seal)
(Witness)	1	(Title)	# ***
		(Surety)	(Seal)
		,	
(Witness)		(Title)	

Bidders shall submit bids on only Bid Form SE-330.

BID	SUBMITTED BY:
	(Bidder's Name)
BID	SUBMITTED TO: University of South Carolina
	(Agency's Name)
FOR	R: PROJECT NAME: <u>UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS</u>
	PROJECT NUMBER: H34-9517
OFF	FR
§ 1.	In response to the Invitation for Construction Services and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Agency on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
§ 2.	Pursuant to SC Code § 11-35-3030(1), Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:  Bid Bond with Power of Attorney  Bid Bond  Cashier's Check  (Bidder check one)
0.2	
§ 3.	Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:
	(Bidder, check all that apply. Note, there may be more boxes than actual addenda. Do not check boxes that do not apply)
	ADDENDA:
§ 4.	Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of <u>60</u> Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Agency.
§ 5.	Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:
§ 6.1	BASE BID WORK (as indicated in the Bidding Documents and generally described as follows): The project consists of
	interior selective demolition and wall and ceiling modifications, including lighting, power, fire alarm, and HVAC. New
	ceilings, stair railings, and circulation and reference desk casework are also included.
	\$, which sum is hereafter called the Base Bid.  (Bidder to insert Base Bid Amount on line above)

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Bidders shall submit bids on only Bid Form SE-330.

§ 6.2 BID ALTERNATES as indicated in the Bidding Documents and generally described as follows:

<u>ALTERNATE # 1</u> (Brief Description): Provide new stair handrail/guardrail system with associated demolition of existing system per the contract documents.
ADD TO or DEDUCT FROM BASE BID: \$
(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)
<u>ALTERNATE # 2</u> (Brief Description): <u>Provide new Circulation Desk and Reference Desk casework with associated electrical work per the contract documents.</u>
☐ ADD TO or ☐ DEDUCT FROM BASE BID: \$
(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)
ALTERNATE # 3 (Brief Description): N/A
☐ ADD TO or ☐ DEDUCT FROM BASE BID: \$
(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

#### § 6.3 UNIT PRICES:

**BIDDER** offers for the Agency's consideration and use, the following UNIT PRICES. The UNIT PRICES offered by BIDDER indicate the amount to be added to or deducted from the CONTRACT SUM for each item-unit combination. UNIT PRICES include all costs to the Agency, including those for materials, labor, equipment, tools of trades and labor, fees, taxes, insurance, bonding, overhead, profit, etc. The Agency reserves the right to include or not to include any of the following UNIT PRICES in the Contract and to negotiate the UNIT PRICES with BIDDER prior to including in the Contract.

No.	ITEM	UNIT OF MEASURE	ADD	DEDUCT
<u>1.</u>			\$	\$
2.			\$	\$
<u>3.</u>			\$	\$
4.			\$	\$
<u>5.</u>			\$	\$
6.			\$	\$

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# § 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED

(See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Classification work listed:

(A) SUBCONTRACTOR LICENSE CLASSIFICATION or SUBCLASSIFICATION NAME (Completed by Agency)	(B) LICENSE CLASSIFICATION or SUBCLASSIFICATION ABBREVIATION (Completed by Agency)	(C) SUBCONTRACTOR and/or PRIME CONTRACTOR (Required - must be completed by Bidder)	(D) SUBCONTRACTOR'S and/or PRIME CONTRACTOR'S SC LICENSE NUMBER (Requested, but not Required)					
BASE BID								
N/A	N/A							
N/A	N/A							
N/A	N/A							
N/A	N/A							
ALTERNATE #1								
N/A	N/A							
N/A	N/A							
N/A	N/A							
N/A	N/A							
	ALTERNATE #2							
N/A	N/A							
N/A	N/A							
N/A	N/A							
N/A	N/A							
ALTERNATE #3								
			•					

If a Bid Alternate is accepted, Subcontractors listed for the Bid Alternate shall be used for the work of both the Alternate and the Base Bid work.

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# INSTRUCTIONS FOR SUBCONTRACTOR LISTING

- 1. Section 7 of the Bid Form sets forth an Agency-developed list of subcontractor license classifications or subclassifications for which Bidder is required to identify the entity (subcontractor(s) and/or himself) Bidder will use to perform this work.
  - a. Columns A & B: The Agency fills out these columns to identify the subcontractor license classification/subclassification and related license abbreviation for which the Bidder must list either a subcontractor or himself as the entity that will perform this work. In Column A, the subcontractor license classification/subclassification is identified by name and in Column B, the related contractor license abbreviation (per Title 40 of the SC Code of Laws) is listed. Abbreviations of licenses can be found at: <a href="https://llr.sc.gov/clb/PDFFiles/CLBClassificationAbbreviations.pdf">https://llr.sc.gov/clb/PDFFiles/CLBClassificationAbbreviations.pdf</a>. If the Agnecy has not identified a subcontractor license classification/subclassification, the Bidder does not list a subcontractor.
  - b. Columns C and D: In these columns, the Bidder identifies the subcontractors it will use for the work of each license listed by the Agency in Columns A & B. Bidder must identify only the subcontractor(s) who will perform the work and no others. Bidders must make sure that their identification of each subcontractor is clear and unambiguous. A listing that could be any number of different entities may be cause for rejection of the bid as non-responsive. For example, a listing of M&M without additional information may be problematic if there are multiple different licensed contractors in South Carolina whose names start with M&M.
- 2. **Subcontractor Defined:** For purposes of subcontractor listing, a subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site pursuant to a contract with the prime contractor. Bidder should not identify sub-subcontractors in the spaces provided on the bid form but only those entities with which Bidder will contract directly. Likewise, do not identify material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the Bidder or proposed subcontractor(s).
- 3. Subcontractor Qualifications: Bidder must only list subcontractors who possess a South Carolina contractor's license that includes the license classification and/or subclassification identified by the Agency in Columns A & B. The subcontractor license must also be within the appropriate license group for the work. If Bidder lists a subcontractor who is not qualified to perform the work, the Bidder will be rejected as non-responsible.
- **4. Use of Own forces:** If, under the terms of the Bidding Documents and SC Contractor Licensing laws, Bidder is qualified to perform the work of a listed subcontractor classification or subclassification and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert itself in the space provided.
- 5. Use of Multiple Subcontractors:
  - a. If Bidder intends to use multiple subcontractors to perform the work of a single license classification/subclassification, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word "and". If Bidder intends to use both his own employees to perform a part of the work of a single license classification/subclassification and to use one or more subcontractors to perform the remaining work, Bidder must insert itself and each subcontractor, preferably separating them with the word "and". Bidder must use each entity listed for the work of a single license classification/subclassification in the performance of that work.
  - b. Optional Listing Prohibited: Bidder may not list multiple subcontractors for a license classification/subclassification in a form that provides the Bidder the option, after bid opening or award, to choose one or more but not all the listed subcontractors to perform the work for which they are listed. A listing, which on its face requires subsequent explanation to determine whether it is an optional listing, is non-responsive. If Bidder intends to use multiple entities to perform the work for a single listing, Bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word "and" between the names of each entity listed. Agency will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word "or", a virgule (that is a /), or any separator that the Agency may reasonably interpret as an optional listing.
- **6.** If Bidder is awarded the contract, Bidder must, except with the approval of the Agency for good cause shown, use the listed entities to perform the work for which they are listed.
- 7. If Bidder is awarded the contract, Bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.
- **8.** Bidder's failure to identify an entity (subcontractor or himself) to perform the work of a subcontractor listed in Columns A & B will render the Bid non-responsive.

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§ 10.

§ 11.

## § 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (FOR INFORMATION ONLY):

Pursuant to instructions in the Invitation for Construction Services, if any, Bidder will provide to Agency upon the Agency's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors,

### § 9.

oth	er than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that
this	list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements
of S	SC Code § 11-35-3020(b)(i).
TI	ME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES
a)	CONTRACT TIME
	Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued
	by the Agency. Bidder agrees to substantially complete the Work within 120 Calendar Days
	from the Date of Commencement, subject to adjustments as provided in the Contract Documents.
b)	LIQUIDATED DAMAGES
	Bidder further agrees that from the compensation to be paid, the Agency shall retain as Liquidated Damages the amount of \$\sum_{0.00}\$ for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.
AG	GREEMENTS
a)	Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.
b)	Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.
c)	Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.
EL	ECTRONIC BID BOND
Ву	signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal
and	Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310,
Bid	Bond, included in the Bidding Documents.
EL	ECTRONIC BID BOND NUMBER:
SIC	SNATURE AND TITLE:

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# CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATION SC Contractor's License Number(s): Classification(s) & Limits: Subclassification(s) & Limits: By signing this Bid, the person signing reaffirms all representation and certification made by both the person signing and the Bidder, including without limitation, those appearing in Article 2 of the SCOSE Version of the AIA Document A701, Instructions to Bidders, is expressly incorporated by reference. BIDDER'S LEGAL NAME: ADDRESS: TELEPHONE: EMAIL: SIGNATURE: DATE: PRINT NAME: TITLE:\_\_\_\_

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# South Carolina Division of Procurement Services, Office of State Engineer Version of MAIA® Document A101® – 2017

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

This version of AIA Document A101®-2017 is modified by the South Carolina Division of Procurement Services, Office of State Engineer ("SCOSE"). Publication of this version of AIA Document A101-2017 does not imply the American Institute of Architects' endorsement of any modification by SCOSE. A comparative version of AIA Document A101-2017 showing additions and deletions by SCOSE is available for review on the SCOSE Web site.

Cite this document as "AIA Document A101®–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum — SCOSE Version," or "AIA Document A101®–2017 — SCOSE Version."

# South Carolina Division of Procurement Services, Office of State Engineer Version of AIA Document A101® – 2017

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

AGREEMENT made as of as of the

day of

in the year

(In words, indicate day, month and year.)

**BETWEEN** the Owner:

(Name, legal status, address and other information)

University of South Carolina 1300 Pickens Street Columbia, SC 29208

The Owner is a Governmental Body of the State of South Carolina as defined in S.C. Code Ann. § 11-35-310.

and the Contractor:

(Name, legal status, address and other information)

for the following Project:

(Name, State Project Number, location and detailed description)

UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS H34-9517

150 Gramling Drive, Spartanburg, SC 29303

This version of AIA Document A101-2017 is modified by the South Carolina Division of Procurement Services, Office of State Engineer. Publication of this version of AIA Document A101 does not imply the American Institute of Architects' endorsement of any modification by South Carolina Division of Procurement Services, Office of State Engineer. A comparative version of AIA Document A101-2017 showing additions and deletions by the South Carolina Division of Procurement Services, Office of State Engineer is available for review on South Carolina state

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

Web site.

The Architect:

(Name, legal status, address and other information)

Jumper Carter Sease Architects, PA 412 Meeting St

West Columbia, SC 29169

The Owner and Contractor agree as follows.

#### **TABLE OF ARTICLES**

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

#### EXHIBIT A INSURANCE AND BONDS

#### ARTICLE 1 THE CONTRACT DOCUMENTS

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

§ 1.2 Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101-2017 Standard Form of Agreement Between Owner and Contractor, SCOSE Version. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201-2017 General Conditions of the Contract for Construction, SCOSE Version.

#### ARTICLE 2 THE WORK OF THIS CONTRACT

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

#### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The Date of Commencement of the Work shall be the date fixed in a Notice to Proceed issued by the Owner. The Owner shall issue the Notice to Proceed to the Contractor in writing, no less than seven (7) days prior to the Date of Commencement. Unless otherwise provided elsewhere in the Contract Documents and provided the Contractor has secured all required insurance and surety bonds, the Contractor may commence work immediately after receipt of the Notice to Proceed.

§ 3.2 The Contract Time as provided in the Notice to Proceed for this project shall be measured from the Date of Commencement of the Work to Substantial Completion.

#### § 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work within the Contract Time indicated in the Notice to Proceed.

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

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum, including all accepted alternates indicated in the bid documents, in current funds for the Contractor's performance of the Contract. The Contract Sum shall be

(\$ ), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

§ 4.2.1 Alternates that are accepted, if any, included in the Contract Sum: (Insert the accepted Alternates.)

Item Price

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

Item Price

#### § 4.4 Unit prices, if any:

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

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

#### § 4.5 Liquidated damages

§ 4.5.1 Contractor agrees that from the compensation to be paid, the Owner shall retain as liquidated damages the amount indicated in Section 9(b) of the Bid Form for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. The liquidated damages amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty.

#### § 4.6 Other:

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

#### ARTICLE 5 PAYMENTS

#### § 5.1 Progress Payments

- § 5.1.1 Based upon Applications for Payment submitted to the Architect and Owner by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.
- § 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:
- § 5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than twenty-one (21) days after receipt of the Application for Payment.
- § 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.
- § 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.
- § 5.1.6 Subject to S.C. Code Ann. § 12-8-550 (Withholding Requirements for Payments to Non-Residents), in accordance with AIA Document A201®–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:
- § 5.1.6.1 The amount of each progress payment shall first include:
  - .1 That portion of the Contract Sum properly allocable to completed Work;
  - .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
  - .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.
- § 5.1.6.2 The amount of each progress payment shall then be reduced by:
  - 1 The aggregate of any amounts previously paid by the Owner;
  - The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
  - Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
  - 4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
  - .5 Retainage withheld pursuant to Section 5.1.7.

#### § 5.1.7 Retainage

- § 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold three and one-half percent (3.5%), as retainage, from the payment otherwise due.
- § 5.1.7.2 When a portion, or division, of Work as listed in the Schedule of Values is 100% complete, that portion of the retained funds which is allocable to the completed division must be released to the Contractor. No later than ten (10) days after receipt of retained funds from the Owner, the Contractor shall pay to the subcontractor responsible for such completed work the full amount of retainage allocable to the subcontractor's work.
- § 5.1.7.3 Upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7.

- § 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.
- § 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

### § 5.2 Final Payment

- § 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when
  - .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201-2017, and to satisfy other requirements, if any, which extend beyond final payment; and
  - .2 a final Certificate for Payment has been issued by the Architect.
- § 5.2.2 The Owner's final payment to the Contractor shall be made no later than twenty-one (21) days after the issuance of the Architect's final Certificate for Payment.

### ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Claims and disputes shall be resolved in accordance with Article 15 of AIA Document A201–2017.

### ARTICLE 7 TERMINATION OR SUSPENSION

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

### ARTICLE 8 MISCELLANEOUS PROVISIONS

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

### § 8.2 The Owner's representative:

§ 8.2.1 The Owner designates the individual listed below as its Senior Representative ("Owner's Senior Representative"), which individual has the responsibility for and, subject to Section 7.2.1 of the General Conditions, the authority to resolve disputes under Section 15.6 of the General Conditions:

Name: Tom Opal

Title: Director Facilities Planning Design & Construction

Address: 1300 Pickens Street, Columbia SC 29208

**Telephone:** (803) 777-7076 Email: tnopal@fmc.sc.edu

§ 8.2.2 The Owner designates the individual listed below as its Owner's Representative, which individual has the authority and responsibility set forth in Section 2.1.1 of the General Conditions:

Name: Ann Derrick Title: Project Manager

Address: 1300 Pickens Street, Columbia SC 29208

**Telephone:** (803) 777-5811 Email: aderrick@fmc.sc.edu

### § 8.3 The Contractor's representative:

§ 8.3.1 The Contractor designates the individual listed below as its Senior Representative ("Contractor's Senior Representative"), which individual has the responsibility for and authority to resolve disputes under Section 15.6 of the General Conditions:

Name:

5

Title:
Address:
Telephone:
Email:

§ 8.3.2 The Contractor designates the individual listed below as its Contractor's Representative, which individual has the authority and responsibility set forth in Section 3.1.1 of the General Conditions:

Name: Title: Address: Telephone: Email:

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

### § 8.5 The Architect's representative:

Name: Darryn Bouknight

Title: AIA

Address: 412 Meeting St, West Columbia SC 29169

**Telephone:** 803-791-1020

Email: dbouknight@jcsarchitects.com

### § 8.6 Insurance and Bonds

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

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

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

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

### § 8.8 Other Provisions:

§ 8.8.1 Additional requirements, if any, for the Contractor's Construction Schedule are as follows:

(Check box if applicable to this Contract)

The Construction Schedule shall be in a detailed precedence-style critical path management (CPM) or primaveratype format satisfactory to the Owner and the Architect that shall also (1) provide a graphic representation of all activities and events that will occur during performance of the Work; (2) identify each phase of construction and occupancy; and (3) set forth milestone dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents.

1 Upon review by the Owner and the Architect for conformance with milestone dates and Construction Time given in the Bidding Documents, with associated Substantial Completion date, the Construction Schedule shall be deemed part of the Contract Documents and attached to the Agreement as an Exhibit. If returned for non-conformance, the Construction Schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted.

- .2 The Contactor shall monitor the progress of the Work for conformance with the requirements of the Construction Schedule and shall promptly advise the Owner of any delays or potential delays. Whenever the Construction Schedule no longer reflects actual conditions and progress of the Work or the Contract Time is modified in accordance with the terms of the Contract Documents, the Contractor shall update the Construction Schedule to reflect such conditions.
- .3 In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary.
- .4 In no event shall any progress report constitute an adjustment in the Contract Time, any milestone date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 8.8.2 The Owner's review of the Contractor's schedule is not conducted for the purpose of either determining its accuracy, completeness, or approving the construction means, methods, techniques, sequences or procedures. The Owner's review shall not relieve the Contractor of any obligations.

### ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101®-2017, SCOSE Version Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101®–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201®–2017, SCOSE Version General Conditions of the Contract for Construction

Date

Title

- .4 Form SE-390, Notice to Proceed Construction Contract
- .5 Drawings

Number

	Number	Date	Pages	
.7	Addenda, if any:			
	Project Manual			
	<b>Section</b> See Table of Contents in	Title	Date	Pages
.6	Specifications			
	Project Manual			
	See Index of Drawings in			

Init.

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

AIA Document E204 <sup>TM</sup> –2017, Sustainable Projects Exhibit, dated as indicated below: (Insert the date of the E204-2017 incorporated into this Agreement.)				
(Insert the date of	the E204-201/ incorporated in	to this Agreement.)		
The Sustainability	Plan:			
Title	Date	Pages		
Supplementary and	other Conditions of the Contraction	act:	Pages	
<u></u>			Pages	
Document  Other documents, if any, list (List here any additional documents)	Title	<b>Date</b> rm part of the Contract	Documents. AIA	
Other documents, if any, list (List here any additional do Document A201®–2017 pro sample forms, the Contractor requirements, and other information proposals, are not part of the	Title  ted below: cuments that are intended to fo	<b>Date</b> rm part of the Contract invitation to bid, Instru f Addenda relating to b er in anticipation of rec enumerated in this Agre	Documents. AIA octions to Bidders, idding or proposa eiving bids or ement. Any such	
Document  Other documents, if any, list (List here any additional document A201®–2017 prosample forms, the Contractor requirements, and other informosals, are not part of the documents should be listed to the form SE-310, Invitation for	Title  cuments that are intended to forwides that the advertisement or or's bid or proposal, portions of ormation furnished by the Owner Contract Documents unless there only if intended to be part	rm part of the Contract invitation to bid, Instru f Addenda relating to b er in anticipation of rec enumerated in this Agre of the Contract Docum	Documents. AIA octions to Bidders, idding or proposa eiving bids or ement. Any such	

.9

Init.

Certificate of Procurement Authority issued by the State Fiscal Accountability Authority

This Agreement entered into as of the day and year first written above.			
OWNER (Signature)	CONTRACTOR (Signature)		
(Printed name and title)	(Printed name and title)		

## South Carolina Division of Procurement Services, Office of State Engineer Version of AIA Document A101® – 2017 Exhibit A

### Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the day of in the year

(In words, indicate day, month and year.)

for the following **PROJECT**:

(Name, State Project Number, and location or address)

UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS H34-9517

150 Gramling Drive, Spartanburg, SC 29303

THE OWNER:

(Name, legal status and address)

University of South Carolina 1300 Pickens Street Columbia, SC 29208 This version of AIA Document A101–2017 Exhibit A is modified by the South Carolina Division of Procurement, Office of State Engineer. Publication of this version of AIA Document A101 Exhibit A does not imply the American Institute of Architects' endorsement of any modification by the South Carolina Division of Procurement, Office of State Engineer.

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

The Owner is a Governmental Body of the State of South Carolina as defined by Title 11, Chapter 35 of the South Carolina Code of Laws, as amended.

### THE CONTRACTOR:

(Name, legal status and address)

### **TABLE OF ARTICLES**

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

### ARTICLE A.1 GENERAL

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

### ARTICLE A.2 OWNER'S INSURANCE

### § A.2.1 General

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

### § A.2.2 Liability Insurance

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

§ A.2.3 Reserved § A.2.3.1 Reserved
§ A.2.3.1.1 Reserved
§ A.2.3.1.2 Reserved
§ A.2.3.1.3 Reserved
§ A.2.3.1.4 Reserved
§ A.2.3.2 Reserved
§ A.2.3.3 Reserved
§ A.2.4 Optional Insurance.  The Owner shall purchase and maintain any insurance selected below.
§ A.2.4.1 Other Insurance (List below any other insurance coverage to be provided by the Owner and any applicable limits.

Limits

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

### § A.3.1 General

Coverage

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

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

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the

Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.1.4 A failure by the Owner to either (i) demand a certificate of insurance or written endorsement required by Section A.3, or (ii) reject a certificate or endorsement on the grounds that it fails to comply with Section A.3, shall not be considered a waiver of Contractor's obligations to obtain the required insurance.

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

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

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

### § A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than \$1,000,000 each occurrence, \$1,000,000 general aggregate, \$1,000,000 aggregate for products-completed operations hazard, \$1,000,000 personal and advertising injury, \$50,000 fire damage (any one fire), and \$5,000 medical expense (any one person) providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

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

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

- § A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than \$1,000,000 per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.
- § A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability, Employers Liability, and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. The umbrella policy limits shall not be less than \$3,000,000.
- § A.3.2.5 Workers' Compensation at statutory limits.
- § A.3.2.6 Employers' Liability with policy limits not less than \$100,000 each accident, \$100,000 each employee, and \$500,000 policy limit for claims, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed.
- § A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks.
- § A.3.2.8 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than

  (\$ ) per claim and

  (\$ ) in the aggregate.
- § A.3.2.9 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than

  (\$ ) per claim and

  (\$ ) in the aggregate.

### § A.3.3 Required Property Insurance

§ A.3.3.1 The Contractor shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Contractor's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.3.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds.

§ A.3.3.1.1 Causes of Loss. The insurance required by this Section A.3.3.1 shall provide coverage for direct physical loss or damage and shall include the risks of fire (with extended coverage), explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, workmanship, or materials. (Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss Sub-Limit

§ A.3.3.1.2 Specific Required Coverages. The insurance required by this Section A.3.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. (Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss Sub-Limit

- § A.3.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall replace the insurance policy required under Section A.3.3.1 with property insurance written for the total value of the Project.
- § A.3.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.3.3 is subject to deductibles or self-insured retentions, the Contractor shall be responsible for all loss not covered because of such deductibles or retentions.
- § A.3.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.3.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.
- § A.3.3.3 If the Owner requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Contractor shall, if possible, include such insurance, and the cost thereof shall be charged to the Owner by appropriate Change Order.
- § A.3.3.4 Before an exposure to loss may occur, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Section A.3.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project.

### § A.3.4 Contractor's Other Insurance Coverage

§ A.3.4.1 Insurance selected and described in this Section A.3.4 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

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

§ A.3.4.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.4.1.

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

§ A.3.4.2.1 Reserved
§ A.3.4.2.2 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.
§ A.3.4.2.3 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.
§ A.3.4.2.4 Boiler and Machinery Insurance  The Contractor shall purchase and maintain boiler and machinery insurance as required, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this

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insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

### § A.3.5 Performance Bond and Payment Bond

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

TypePenal Sum (\$0.00)Payment Bond100% of Contract PricePerformance Bond100% of Contract Price

§ A.3.5.1 Before commencing any services hereunder, the Contractor shall provide the Owner with Performance and Payment Bonds, each in an amount not less than the Contract Price set forth in Article 4 of the Agreement. The Surety shall have, at a minimum, a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty". In addition, the Surety shall have a minimum "Best Financial Strength Category" of "Class V", and in no case less than five (5) times the contract amount. The Performance Bond shall be written on Form SE-355, "Performance Bond" and the Payment Bond shall be written on Form SE-357, "Labor and Material Payment Bond", and both shall be made payable to the Owner.

- § A.3.5.2 The Performance and Labor and Material Payment Bonds shall:
  - .1 be issued by a surety company licensed to do business in South Carolina;
  - .2 be accompanied by a current power of attorney and certified by the attorney-in-fact who executes the bond on the behalf of the surety company; and
  - .3 remain in effect for a period not less than one (1) year following the date of Substantial Completion or the time required to resolve any items of incomplete Work and the payment of any disputed amounts, whichever time period is longer.
- § A.3.5.3 Any bonds required by this Contract shall meet the requirements of the South Carolina Code of Laws and Regulations, as amended.

### ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

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

# South Carolina Division of Procurement Services, Office of State Engineer Version of AIA Document A201® – 2017

General Conditions of the Contract for Construction

This version of AIA Document A201®-2017 is modified by the South Carolina Division of Procurement Services, Office of State Engineer ("SCOSE"). Publication of this version of AIA Document A201-2017 does not imply the American Institute of Architects' endorsement of any modification by SCOSE. A comparative version of AIA Document A201-2017 showing additions and deletions by SCOSE is available for review on the SCOSE Web site.

Cite this document as "AIA Document A201®-2017, General Conditions of the Contract for Construction—SCOSE Version," or "AIA Document A201®-2017—SCOSE Version."

## South Carolina Division of Procurement Services, Office of State Engineer Version of MAIA Document A201® – 2017

### General Conditions of the Contract for Construction

### for the following PROJECT:

(Name, State Project Number, and location or address)

UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS
H34-9517
150 Gramling Drive, Spartanburg, SC 29303

### THE OWNER:

(Name, legal status, and address)

University of South Carolina 1300 Pickens Street Columbia, SC 29208

The Owner is a Governmental Body of the State of South Carolina as defined in S.C. Code Ann.§ 11-35-310.

### THE ARCHITECT:

(Name, legal status, and address)

Jumper Carter Sease Architects, PA 412 Meeting Street West Columbia, SC 29169

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Written Consent

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,

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### ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

### § 1.1.1 The Contract Documents

- 11 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
- .2 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.
- .3 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.
- .4 Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101-2017, Standard Form of Agreement Between Owner and Contractor, SCOSE Version.
- .5 Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201-2017, General Conditions of the Contract for Construction, SCOSE Version.

### § 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.

### § 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 Reserved

### § 1.1.9 Notice to Proceed

The Notice to Proceed is a document issued by the Owner to the Contractor directing the Contractor to begin prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed shall fix the date on which the Contract Time will commence and establish the initial date of the Substantial Completion.

### § 1.1.10 State Engineer

"State Engineer" means the person holding the position as head of the State Engineer's Office. The State Engineer's Office is created by S.C. Code Ann. § 11-35-830, and is sometimes referred to in the Contract Documents as "Office of State Engineer" or "OSE." The State Engineer is also the Chief Procurement Officer for Construction, sometimes referred to in the Contract Documents as "CPOC".

### § 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. In the event of patent ambiguities within or between parts of the Contract Documents, the Contractor shall 1) provide the better quality or greater quantity of Work, or 2) comply with the more stringent requirement, either or both in accordance with the Architect's interpretation.
- § 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, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.
- § 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 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 a violation 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

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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.
- § 1.6.3 Notice to Contractor shall be to the address provided in Section 8.3.2 of the Agreement. Notice to Owner shall be to the address provided in Section 8.2.2 of the Agreement. Either party may designate a different address for notice by giving notice in accordance with Section 1.6.1.

### § 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, including in digital form. The parties will use AIA Document E203<sup>TM</sup>–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<sup>TM</sup>–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202<sup>TM</sup>–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

### ARTICLE 2 OWNER

### § 2.1 General

- § 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, except as provided in Section 7.1.7. 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 Representative noted in the Agreement.
- § 2.1.2 The Owner shall furnish to the Contractor, within fifteen (15) days after receipt of a written request, information necessary and relevant for the Contractor to post Notice of Project Commencement pursuant to S.C. Code Ann. § 29-5-23.

### § 2.2 Reserved

### § 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 a design professional lawfully licensed to practice, or an entity lawfully practicing, in the jurisdiction where the Project is located. The 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. Subject to the Contractor's obligations, including those in Section 3.2, the Contractor shall be entitled to rely on the accuracy of information furnished by the Owner pursuant to this Section 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. However, the Owner does not warrant the accuracy of any such information requested by the Contractor that is not otherwise required of the Owner by the Contract Documents. Neither the Owner nor the Architect shall be required to conduct investigations or to furnish the Contractor with any information concerning subsurface characteristics or other conditions of the area where the Work is to be performed beyond that which is provided in the Contract Documents.
- § 2.3.6 The Owner shall furnish the Contract Documents to the Contractor in digital format.

### § 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, including but not limited to providing necessary resources, 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 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 Representative noted in the Agreement.
- § 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.
  - 1 The Contractor acknowledges that it has investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to (a) conditions bearing upon transportation, disposal, handling, and storage of materials; (b) the availability of labor, water, electric power, and roads; (c) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (d) the conformation and conditions of the ground; and (e) the character of equipment and facilities needed preliminary to and during work performance.
  - .2 The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

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- reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from the drawings and specifications made a part of this Contract.
- .3 Any failure of the Contractor to take the actions described and acknowledged in this Section will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work, or for proceeding to successfully perform the Work without additional expense to the Owner.
- § 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 latent 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.
- § 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

### § 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 and provide its findings to the Owner. Unless the Owner 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.
- § 3.4.2.1 After the Contract has been executed, the Owner and Architect may consider requests for the substitution of products in place of those specified. The Owner and Architect may, but are not obligated to, consider only those substitution requests that are in full compliance with the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:
  - .1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to the product specified;
  - .2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;
  - .3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be performed or changes as a result of the substitution, except for the Architect's re-design costs, and waives all claims for additional costs related to the substitution that subsequently become apparent;
  - .4 agrees that it shall, if the substitution is approved, coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects; and
  - .5 represents that the request includes a written representation identifying any potential effect the substitution may have on Project's achievement of a Sustainable Measure or the Sustainable Objective.
- § 3.4.2.2 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.
- § 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 shall be considered defective. Unless caused by the Contractor or a subcontractor at any tier, 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. The Contractor shall comply with the requirements of S.C Code Ann. Title 12, Chapter 8, regarding withholding tax for nonresidents, employees, contractors and subcontractors.

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

- § 3.7.1 Pursuant to S.C. Code Ann. § 10-1-180, no local general or specialty building permits are required for state buildings. Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for all other permits, fees, and licenses 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 the difference between actual costs, as documented by invoices, and the allowances under Section 3.8.2.1.
- § 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, acceptable to the Owner, 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.

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- § 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 Owner may notify the Contractor, stating whether the Owner has reasonable objection to the proposed superintendent. Failure of the Owner 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 has made reasonable and timely objection. The Contractor shall notify the Owner of any proposed change in the superintendent, including the reason therefore, prior to making such change. 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. Subject to any additional requirements in the Contract Documents, the schedule shall contain detail appropriate for the Project, including at a minimum (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.
  - .1 The fire sprinkler shop drawings shall be prepared by a licensed fire sprinkler contractor and shall accurately reflect actual conditions affecting the required layout of the fire sprinkler system. The fire sprinkler contractor shall certify the accuracy of his shop drawings prior to submitting them for review and approval.
  - .2 The fire sprinkler shop drawings shall be reviewed and approved by the Architect's engineer of record (EOR) prior to submittal to the State Fire Marshal. The EOR will complete the Office of State Fire Marshal (OSFM) form "Request for Fire Sprinkler System Shop Review for State Construction Projects" and submit it to OSE for signature.
  - .3 OSE will sign the form and return it to the Architect's EOR. The EOR will submit a copy of the signed form with the approved shop drawings to OSFM for review and approval; and, forward a copy of each to OSE.
  - .4 Upon receipt of the OSFM approval letter, the EOR will forward a copy of the letter to the Owner, Contractor, Architect, and OSE.
  - .5 Unless authorized in writing by OSE, neither the Contractor nor subcontractor at any tier shall submit the fire sprinkler shop drawings directly to OSFM.
- § 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, who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and 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

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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 The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### § 3.13 Use of Site

- § 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.
- § 3.13.2 The Contractor and any entity for which the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner.

### § 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) including loss of use resulting therefrom, but

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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. Any reference in the Contract Documents to the Architect taking action or rendering a decision with a "reasonable time" is understood to mean no more than ten (10) days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.
- § 4.2.2 The Architect will visit the site as necessary to fulfill its obligation to the Owner for inspection services, if any, and, at a minimum, to assure conformance with the Architect's design as shown in the Contract Documents and to observe 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 informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) deviations from the Contract Documents, (2) 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 Work completed and correlated with the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

- § 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.
- § 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- § 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.
- § 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.
- § 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.
- § 4.2.11 The Architect will, in the first instance, interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. Upon receipt of such request, the Architect will promptly provide the other party with a copy of the request. 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, and will not show partiality to either. Except in the case of interpretations resulting in omissions, defects, or errors in the Instruments of Service or perpetuating omissions, defects or errors in the Instruments of Service, the Architect will not be liable for results of interpretations or decisions rendered in good faith. If either party disputes the Architect's interpretation or decision, that party may proceed as provided in Article 15. The Architect's interpretations and decisions may be, but need not be, accorded any deference in any review conducted pursuant to law or the Contract Documents.
- § 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 so as to avoid delay to the construction of the Project. The Architect's response to such requests will be made in writing with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. Any response to a request for information must be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

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Unless issued pursuant to a Modification, supplemental Drawings or Specifications will not involve an adjustment to the Contract Sum or Contract Time.

### 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, within fourteen (14) days after posting of the Notice of Intent to Award 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 Owner may notify the Contractor whether the Owner has reasonable objection to any such proposed person or entity. Failure of the Owner 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 has made reasonable and timely objection. The Owner shall not direct the Contractor to contract with any specific individual or entity for supplies or services unless such supplies and services are necessary for completion of the Work and the specified individual or entity is the only source of such supply or service.
- § 5.2.3 If the Owner has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner 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 makes reasonable objection to such substitution. The Contractor's request for substitution must be made to the Owner in writing, accompanied by supporting information.
- § 5.2.5 A Subcontractor identified in the Contractor's Bid pursuant to the subcontractor listing requirements of Section 7 of the Bid Form may only be substituted in accordance with and as permitted by the provisions of S.C. Code Ann. § 11-35-3021. A proposed substitute for a listed subcontractor shall also be subject to the Owner's approval as set forth in Section 5.2.3.
- § 5.2.6 A Contractor may substitute one prospective subcontractor for another, with the approval of the Owner as follows:
  - .1 If the Contractor requests the substitution, the Contractor is responsible for all costs associated with the substitution.
  - .2 If the Owner requests the substitution, the Owner is responsible for any resulting increased costs to the Contractor.

### § 5.3 Subcontractual Relations

§ 5.3.1 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 herein, or 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.

- § 5.3.2 Without limitation on the generality of Section 5.3.1, each Subcontract agreement and each Sub-subcontract agreement shall include, and shall be deemed to include, the following Sections of these General Conditions: 3.2, 3.5, 3.18, 5.3, 5.4, 6.2.2, 7.1.6, 7.3.3, 7.5, 13.1, 13.9, 14.3, 14.4, and 15.1.7.
- § 5.3.3 Each Subcontract Agreement and each Sub-subcontract agreement shall exclude, and shall be deemed to exclude, Sections 13.2 and 13.5 and all of Article 15, except Section 15.1.7, of these General Conditions. In the place of these excluded sections of the General Conditions, each Subcontract Agreement and each Sub-subcontract may include Sections 13.2 and 13.5 and all of Article 15, except Section 15.1.7, of AIA Document A201-2007, Conditions of the Contract, as originally issued by the American Institute of Architects.
- § 5.3.4 The Contractor shall assure the Owner that all agreements between the Contractor and its Subcontractor incorporate the provisions of Section 5.3.1 as necessary to preserve and protect the rights of the Owner and the Architect under the Contract Documents with respect to the work to be performed by Subcontractors so that the subcontracting thereof will not prejudice such rights. The Contractor's assurance shall be in the form of an affidavit or in such other form as the Owner may approve. Upon request, the Contractor shall provide the Owner or Architect with copies of any or all subcontracts or purchase orders.

## § 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.
- § 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.
- § 5.4.4 Each subcontract shall specifically provide that the Owner shall only be responsible to the subcontractor for those obligations of the Contractor that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.
- § 5.4.5 Each subcontract shall specifically provide that the Subcontractor agrees to perform portions of the Work assigned to the Owner in accordance with the Contract Documents.
- § 5.4.6 Nothing in this Section 5.4 shall act to reduce or discharge the Contractor's payment bond surety's obligations to claimants for claims arising prior to the Owner's exercise of any rights under this conditional assignment.

#### 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 Reserved

## § 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.
- § 7.1.4 If a change in the Work provides for an adjustment to the Contract Sum, the amount of such adjustment must be computed and documented in writing. In order to facilitate evaluation of proposals or claims for increases and decreases to the Contract Sum, all proposals or claims, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized. Where major cost items are subcontracts, they shall be itemized also. The amount of the adjustment must approximate the actual cost to the Contractor and all costs incurred by the Contractor must be justifiably compared with prevailing industry standards. Except as provided in Section 7.1.5, all adjustments to the Contract Sum shall be limited to job specific costs and shall not include indirect costs, home office overhead or profit.
- § 7.1.5 The combined overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:
  - .1 For the Contractor, for Work performed by the Contractor's own forces, seventeen (17%) percent of the Contractor's actual costs.
  - .2 For the Contractor, for Work performed by the Contractor's Subcontractors, ten (10%) percent of each Subcontractor's actual costs (not including the Subcontractor's overhead and profit).
  - .3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, seventeen (17%) percent of the Subcontractor's actual costs.
  - .4 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4.

The percentages cited above shall be considered to include all indirect costs including, but not limited to field and office managers, supervisors and assistants, incidental job burdens, small tools, and general overhead allocations.

- § 7.1.6 The procedures described in Sections 7.1.4 and 7.1.5 shall be used to calculate any adjustment in the Contract Sum, including without limitation an adjustment permitted under Articles 7, 9, 14, or 15.
- § 7.1.7 If a change in the Work requires an adjustment to the Contract Sum that exceeds the limits of the Owner's Construction Change Order Certification (reference Section 9.1.9 of the Agreement), then the Owner's agreement is not effective, and Work may not proceed until approved in writing by the OSE.
- § 7.1.8 Any change in the Work initiated after the declaration of Substantial Completion must be approved in writing by the OSE regardless of the amount of the change or the Owner's Construction Change Order Certification.

## § 7.2 Change Orders

- § 7.2.1 A Change Order is a written instrument, using the OSE Construction Change Order form, 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.

Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, any adjustments to the Contract Sum or the Contract Time.

- § 7.2.2 At the Owner's request, the Contractor shall prepare a proposal to perform the work of a proposed Change Order setting forth the amount of the proposed adjustment, if any, in the Contract Sum; and the extent of the proposed adjustment, if any, in the Contract Time. Any proposed adjustment in the Contract Sum shall be prepared in accordance with Section 7.1.4 and 7.1.5. The Owner's request shall include any revisions to the Drawings or Specifications necessary to define any changes in the Work. Within fourteen (14) days of receiving the request, the Contractor shall submit the proposal to the Owner and Architect along with all documentation required by Section 7.5.
- § 7.2.3 If the Contractor requests a Change Order, the request shall set forth the proposed change in the Work and shall be prepared in accordance with Section 7.2.2. If the Contractor requests a change to the Work that involves a revision

to either the Drawings or Specifications, the Contractor shall reimburse the Owner for any expenditure associated with the Architects' review of the proposed revisions, except to the extent the revisions are accepted by execution of a Change Order.

## § 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 if properly itemized and substantiating data is not available to permit evaluation;
  - .2 Unit prices specified in the Contract Documents or subsequently agreed upon, subject to adjustment if any, as provided in Section 9.1.2;
  - .3 Cost and a percentage fee, calculated as described in Sections 7.1.4 and 7.1.5;
  - .4 in another manner as the parties may agree; or
  - .5 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 make an initial determination, consistent with Section 7.3.3, of the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.1.5. 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; and
  - .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related 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 cost including overhead and profit as confirmed by the Architect from the Schedule of Values.
- § 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.

## § 7.5 Pricing Data and Audit

## § 7.5.1 Cost or Pricing Data

Upon request of the Owner or Architect, Contractor shall submit cost or pricing data prior to execution of a Modification which exceeds \$500,000 [Reference S.C. Code Ann. §§ 11-35-1830 and 11-35-2220, and SC Code Ann. Reg 19-445.2120]. Contractor shall certify that, to the best of its knowledge and belief, the cost or pricing data submitted is accurate, complete, and current as of a mutually determined specified date prior to the date of pricing the Modification. Contractor's price, including profit, shall be adjusted to exclude any significant sums by which such price was increased because Contractor furnished cost or pricing data that was inaccurate, incomplete, or not current as of the date specified by the parties. Notwithstanding Subparagraph 9.10.4, such adjustments may be made after final payment to the Contractor.

§ 7.5.2 Cost or pricing data means all facts that, as of the date specified by the parties, prudent buyers and sellers would reasonably expect to affect price negotiations significantly. Cost or pricing data are factual, not judgmental; and are verifiable. While they do not indicate the accuracy of the prospective contractor's judgment about estimated future costs or projections, they do include the data forming the basis for that judgment. Cost or pricing data are more than historical accounting data; they are all the facts that can be reasonably expected to contribute to the soundness of estimates of future costs and to the validity of determinations of costs already incurred.

## § 7.5.3 Records Retention

As used in Section 7.5, the term "Records" means any books or records that relate to cost or pricing data of a Change Order that Contractor is required to submit pursuant to Section 7.5.1. Contractor shall maintain records for three years from the date of final payment, or longer if requested by the chief procurement officer. The Owner may audit Contractor's records at reasonable times and places.

## 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 commence the Work prior to the effective date of surety bonds and 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 dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time, the Contract Time shall be extended for such reasonable time as the Architect may determine, provided the delay:
  - .1 is not caused by the fault or negligence of the Contractor or a subcontractor at any tier, and
  - .2 is not due to unusual delay in the delivery of supplies, machinery, equipment, or services when such supplies, machinery, equipment, or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery.
- § 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.
- § 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

#### ARTICLE 9 PAYMENTS AND COMPLETION

## § 9.1 Contract Sum

- § 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.
- § 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

#### § 9.2 Schedule of Values

- § 9.2.1 The Contractor shall submit a schedule of values to the Architect within ten (10) days of full execution of the Agreement, 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.
- § 9.2.2 As requested by the Architect, the Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible. The breakdown, being submitted on a uniform standardized format approved by the Architect and Owner, shall be divided in detail, using convenient units, sufficient to accurately determine the value of completed Work during the course of the Project. The Contractor shall update the schedule of values as required by either the Architect or Owner as necessary to reflect:
  - .1 the description of Work (listing labor and material separately);
  - .2 the total value of the Work;
  - .3 the percent and value of the Work completed to date;
  - .4 the percent and value of previous amounts billed; and
  - .5 the current percent completed, and amount billed.

§ 9.2.3 Any schedule of values or trade breakdown that fails to provide sufficient detail, is unbalanced, or exhibits "front-loading" of the value of the Work shall be rejected. If a schedule of values or trade breakdown is used as the basis for payment and later determined to be inaccurate, sufficient funds shall be withheld from future Applications for Payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Work.

## § 9.3 Applications for Payment

- § 9.3.1 Monthly, 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 as 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, provided such materials or equipment will be subsequently incorporated in the Work. 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. The Contractor shall 1) protect such materials from diversion, vandalism, theft, destruction, and damage, 2) mark such materials specifically for use on the Project, and 3) segregate such materials from other materials at the storage facility. The Architect and the Owner shall have the right to make inspections of the storage areas at any time.
- § 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 in both the Application for Payment and, if required to be submitted, the accompanying current construction schedule, 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; or (3) 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 shall 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. The Architect shall withhold a Certificate of Payment if the Application for Payment is not accompanied by the current construction schedule required by Section 3.10.1. 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 Pursuant to S.C. Ann. §§ 29-6-10 through 29-6-60, 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 to the Owner, 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 time established in the Contract Documents, the amount certified by the Architect or awarded by final dispute resolution order, 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 written 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, the Owner, and any other party the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to determine whether the Work or designated portion thereof is substantially complete. The Contractor shall furnish access for the inspection and testing as provided in this Contract. The inspection shall include a demonstration by the Contractor that all equipment, systems and operable components of the Work function properly and in accordance with the Contract Documents.
  - 1 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.
  - .2 If more than one Substantial Completion inspection is required, the Contractor shall reimburse the Owner for all costs of re-inspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.
  - .3 Representatives of the State Fire Marshal's Office and other authorities having jurisdiction may be present at the Substantial Completion inspection or otherwise inspect the completed Work and advise the Owner whether the Work meets their respective requirements for the Project.

- § 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 for its written acceptance of responsibilities assigned in the Certificate and a copy of the signed Certificate shall be delivered to the Contractor. Upon such acceptance, 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.
- § 9.8.6 If the Architect and Owner concur in the Contractor's assessment that the Work or a portion of the Work is safe to occupy, the Owner and Contractor may arrange for a Certificate of Occupancy inspection by OSE. The Owner, Architect, and Contractor shall be present at OSE's inspection. Upon verifying that the Work or a portion of the Work is substantially complete and safe to occupy, OSE will issue, as appropriate, a Full or Partial Certificate of Occupancy.
- § 9.8.7 The Owner may not occupy the Work until all required occupancy permits, if any, have been issued and delivered to the Owner.

#### § 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 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion within thirty days after Substantial Completion. 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, the Owner, and any other party the Architect or the Owner choose will make an inspection on a date and at a time mutually agreeable. 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.
  - 1 If more than one Final Completion inspection is required, the Contractor shall reimburse the Owner for all costs of re-inspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.
  - .2 If the Contractor does not achieve Final Completion within thirty days after Substantial Completion or the timeframe agreed to by the parties in the Certificate of Substantial Completion, whichever is

- greater, the Contractor shall be responsible for any additional Architectural fees resulting from the delay.
- .3 If OSE has not previously issued a Certificate of Occupancy for the entire Project, the Parties shall arrange for a representative of OSE to participate in the Final Completion inspection.
- § 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect:
  - 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.
  - 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,
  - .7 required Training Manuals,
  - .8 equipment Operations and Maintenance Manuals,
  - .9 any certificates of testing, inspection or approval required by the Contract Documents and not previously provided, and
  - **10.** one copy of the Documents required by Section 3.11.
- § 9.10.3 If, after Substantial Completion of the Work, final completion thereof is delayed 60 days 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 specific claims in stated amounts that have been 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

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- .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

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- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- § 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.
- § 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.
- § 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.
- § 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.
- § 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.
- § 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

## § 10.2.8 Injury or Damage to Person or Property

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

#### § 10.3 Hazardous Materials and Substances

- § 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance which was not discoverable as provided in Section 3.2.1 and not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons or serious loss to real or personal property resulting from such a material or substance 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. Hazardous materials or substances are those hazardous, toxic, or radioactive materials or substances subject to regulations by applicable governmental authorities having jurisdiction, such as, but not limited to, the S.C. Department of Health and Environmental Control, the U.S. Environmental Protection Agency, and the U.S. Nuclear Regulatory Commission.
- § 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. In the absence of agreement, the Architect will make an interim determination regarding any delay or impact on the Contractor's additional costs. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the rights of either party to disagree and assert a Claim in accordance with Article 15.

- § 10.3.3 The Work in the affected area shall be resumed immediately following the occurrence of any one of the following events: (a) the Owner causes remedial work to be performed that results in the absence of hazardous materials or substances; (b) the Owner and the Contractor, by written agreement, decide to resume performance of the Work; or (c) the Work may safely and lawfully proceed, as determined by an appropriate governmental authority or as evidenced by a written report to both the Owner and the Contractor, which is prepared by an environmental engineer reasonably satisfactory to both the Owner and the Contractor.
- § 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 In addition to its obligations under Section 3.18, 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 Reserved

#### § 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. The Contractor shall immediately give the Owner and Architect notice of the emergency. This initial notice may be oral followed within five (5) days by a written notice setting forth the nature and scope of the emergency. Within fourteen (14) days of the start of the emergency, the Contractor shall give the Architect a written estimate of the cost and probable effect of delay on the progress of the Work.

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

§ 11.1.5 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 and all additional insureds of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Owner: (1) the Owner, upon receipt of notice from the Contractor, 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 not be equitably adjusted; and (3) the Contractor waives all rights against the Owner to the extent any loss to the Contractor, Subcontractors, and Sub-subcontractors would have been covered by the insurance had it not expired or been cancelled. If the Owner purchases replacement coverage, the cost of the insurance shall be charged to the Contractor by an appropriate Change Order. 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 Reserved

## § 11.2.3 Reserved

## § 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.

## § 11.3.3 Limitation on the Owner's Waiver of Subrogation

South Carolina law prohibits the State from indemnifying a private party. Accordingly, and notwithstanding anything in the Agreement to the contrary, including but not limited to Sections 11.3.1, 11.3.2. and 11.4, the Owner cannot and

does not waive subrogation to the extent any losses are covered by insurance provided by the South Carolina Insurance Reserve Fund.

## § 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 Contractors as fiduciary and made payable to the Contractor 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 Contractor shall pay the Architect and Owner their just shares of insurance proceeds received by the Contractor, and by appropriate agreements the Architect and Owner shall make payments to their consultants and separate contractors in similar manner.
- § 11.5.2 Prior to settlement of an insured loss, the Contractor shall notify the Owner of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Owner shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Owner does not object, the Contractor shall settle the loss and the Owner shall be bound by the settlement and allocation. Upon receipt, the Contractor 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 Owner timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Contractor 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.
- § 11.5.3 If required in writing by a party in interest, the Contractor as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor.

#### 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 requirements specifically expressed in the Contract Documents, including inspections of work-in-progress required by all authorities having jurisdiction over the Project, it must, upon demand of the Architect or authority having jurisdiction, be uncovered for observation/inspection 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 unless the condition was caused by the Owner or a Separate Contractor in which event the Owner shall be responsible for payment of such costs.

## § 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.

.1 If the Contractor, a Subcontractor, or anyone for whom either is responsible, uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

#### § 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. 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 unless otherwise provided in the Contract Documents.
- § 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

- § 13.1.1 The Contract, any dispute, claim, or controversy relating to the Contract, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules.
- § 13.1.2 This Contract is formed pursuant to and governed by the South Carolina Consolidated Procurement Code and is deemed to incorporate all applicable provisions thereof and the ensuing regulations.

#### § 13.2 Successors and Assigns

The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole, or in part, without written consent of the other and then only in accordance with and as permitted by Regulation 19-445.2180 of the South Carolina Code of Regulations, as amended. If either party attempts

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to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

#### § 13.3 Rights and Remedies

- § 13.3.1 Unless expressly provided otherwise, 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.
- § 13.3.3 Notwithstanding Section 9.10.4, the rights and obligations which, by their nature, would continue beyond the termination, cancellation, rejection, or expiration of this contract shall survive such termination, cancellation, rejection, or expiration, including, but not limited to, the rights and obligations created by the following clauses:
  - 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service;
  - 3.5 Warranty
  - 3.17 Royalties, Patents and Copyrights
  - 3.18 Indemnification
  - 7.5 Pricing Data and Audit
  - A.3.2.2 Contractor's Liability Insurance (A101, Exhibit A)
  - A.3.5 Performance and Payment Bond (A101, Exhibit A)
  - 15.1.7 Claims for Listed Damages
  - 15.1.8 Waiver of Claims Against the Architect
  - 15.6 Dispute Resolution
  - 15.6.5 Service of Process

## § 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 Owner and Architect timely notice of when and where tests and inspections are to be made so that they 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.
  - .1 Inspection, Special Inspections, and testing requirements, if any, as required by the ICC series of Building Codes shall be purchased by the Owner.
  - .2 Contractor shall schedule and request inspections in an orderly and efficient manner and shall notify the Owner whenever the Contractor schedules an inspection. Contractor shall be responsible for the cost of inspections scheduled and conducted without the Owner's knowledge and for any increase in the cost of inspections resulting from the inefficient scheduling of inspections.
- § 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 Owner and 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 and shall be deducted from future Applications of Payment.

- § 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 to the Contractor and unpaid under the Contract Documents shall bear interest only if and to the extent allowed by S.C. Code Ann. §§ 29-6-10 through 29-6-60. Amounts due to the Owner shall bear interest at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.

## § 13.6 Procurement of Materials by Owner

The Contractor accepts assignment of all purchase orders and other agreements for procurement of materials and equipment by the Owner that are identified as part of the Contract Documents. The Contractor shall, upon delivery, be responsible for the storage, protection, proper installation, and preservation of such Owner purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. Unless the Contract Documents specifically provide otherwise, all Contractor warranty of workmanship and correction of the Work obligations under the Contract Documents shall apply to the Contractor's installation of and modifications to any Owner purchased items.

#### § 13.7 Interpretation of Building Codes

As required by S.C. Code Ann. § 10-1-180, OSE shall determine the enforcement and interpretation of all building codes and referenced standards on state buildings. The Contractor shall refer any questions, comments, or directives from local officials to the Owner and OSE for resolution.

## § 13.8 Minority Business Enterprises

Contractor shall notify Owner of each Minority Business Enterprise (MBE) providing labor, materials, equipment, or supplies to the Project under a contract with the Contractor. Contractor's notification shall be via the first monthly status report submitted to the Owner after execution of the contract with the MBE. For each such MBE, the Contractor shall provide the MBE's name, address, and telephone number, the nature of the work to be performed or materials or equipment to be supplied by the MBE, whether the MBE is certified by the South Carolina Office of Small and Minority Business Assistance, and the value of the contract.

## § 13.9 Illegal Immigration

Contractor certifies and agrees that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractor's language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractor's language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at <a href="https://www.procurement.sc.gov">www.procurement.sc.gov</a>)

## § 13.10 Drug-Free Workplace

The Contractor must comply with the Drug-Free Workplace Act, S.C. Code Ann. §§ 44-107-10, et seq. The Contractor certifies to the Owner that Contractor will provide a Drug-Free Workplace, as defined by S.C. Code Ann. § 44-107-20(1).

## § 13.11 False Claims

According to S.C. Code Ann. § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.

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#### § 13.12 Prohibited Acts

It is unlawful for a person charged with disbursements of state funds appropriated by the General Assembly to exceed the amounts and purposes stated in the appropriations. (§ 11-9-20) It is unlawful for an authorized public officer to enter into a contract for a purpose in which the sum is in excess of the amount appropriated for that purpose. It is unlawful for an authorized public officer to divert or appropriate the funds arising from any tax levied and collected for any one fiscal year to the payment of an indebtedness contracted or incurred for a previous year. (§ 11-1-40)

## § 13.13 Open Trade (Jun 2015)

During the contract term, including any renewals or extensions, Contractor will not engage in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in S.C. Code Ann. § 11-35-5300.

## 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 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:
  - .1 Issuance of an order of a court or other public authority having jurisdiction that requires substantially all Work to be stopped; or
  - .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 and the Contractor has stopped work in accordance with Section 9.7.
- § 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, 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 Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has persistently 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, or otherwise fails to prosecute the Work, or any separable part of the Work, with the diligence, resources and skill that will ensure its completion within the time specified in the Contract Documents, including any authorized adjustments;
  - .2 fails to make payment to Subcontractors or suppliers in accordance with the Contract Documents and 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, 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 Architect, upon application, and this obligation for payment shall survive termination of the Contract.
- § 14.2.5 If, after termination for cause, it is determined that the Owner lacked justification to terminate under Section 14.2.1, or that the Contractor's default was excusable, or that the termination for cause was affected by any other error, then Owner and Contractor agree that the termination shall be conclusively deemed to be one for the convenience of the Owner, and the rights and obligations of the parties shall be the same as if the termination had been issued for in Section 14.4.

## § 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. 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 in whole or in part for the Owner's convenience and without cause. The Owner shall give notice of the termination to the Contractor specifying the part of the Contract terminated and when termination becomes effective.
- § 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;
  - .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; and
  - 4 complete the performance of the Work not terminated, if any.
- § 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 any other adjustments otherwise set forth in the Agreement.
- § 14.4.4 Contractor's failure to include an appropriate termination for convenience clause in any subcontract shall not (i) affect the Owner's right to require the termination of a subcontract, or (ii) increase the obligation of the Owner beyond what it would have been if the subcontract had contained an appropriate clause.
- § 14.4.5 Upon written consent of the Contractor, the Owner may reinstate the terminated portion of this Contract in whole or in part by amending the notice of termination if it has been determined that:

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.1 the termination was due to withdrawal of funding by the General Assembly, Governor, or State Fiscal Accountability Authority or the need to divert project funds to respond to an emergency as defined by Regulation 19-445.2110(B) of the South Carolina Code of Regulations, as amended;

- .2 funding for the reinstated portion of the Work has been restored;
- .3 circumstances clearly indicate a requirement for the terminated Work; and
- .4 reinstatement of the terminated work is advantageous to the Owner.

## 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. A voucher, invoice, payment application or other routine request for payment that is not in dispute when submitted is not a Claim under this definition. 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 Reserved

#### § 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 Architect. Such notice shall include sufficient information to advise the Architect and other party of the circumstances giving rise to the Claim, the specific contractual adjustment or relief requested and the basis of such request. 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 except as stated for adverse weather days in Section 15.1.6.2. By failing to give written notice of a Claim within the time required by this Section, a party expressly waives its Claim.

§ 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 Architect is required.

## § 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, including any administrative review allowed under Section 15.6, 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 Architect'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. Claims for an increase in the Contract Time shall be based on one additional calendar day for each full calendar day that the Contractor is prevented from working.

- § 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.
  - 1 Claims for adverse weather shall be based on actual weather conditions at the job site or other place of performance of the Work, as documented in the Contractor's job site log.

- .2 For the purpose of this Contract, a total of five (5) days per calendar month (non-cumulative) shall be anticipated as "adverse weather" at the job site, and such time will not be considered justification for an extension of time. If, in any month, adverse weather develops beyond the five (5) days, the Contractor shall be allowed to claim additional days to compensate for the excess weather delays only to the extent of the impact on the approved construction schedule and days the Contractor was already scheduled to work. The remedy for this condition is for an extension of time only and is exclusive of all other rights and remedies available under the Contract Documents or imposed or available by law.
- .3 The Contractor shall submit monthly with their pay application all Claims for adverse weather conditions that occurred during the previous month. The Architect shall review each monthly submittal in accordance with Section 15.5 and inform the Contractor and the Owner promptly of its evaluation. Approved days shall be included in the next Change Order issued by the Architect. Adverse weather conditions not claimed within the time limits of this Subparagraph shall be considered to be waived by the Contractor. Claims will not be allowed for adverse weather days that occur after the scheduled (original or adjusted) date of Substantial Completion.
- § 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the work, and the number of days increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.
- § 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

## § 15.1.7 Claims for Listed Damages

Notwithstanding any other provision of the Contract Documents, including Section 1.2.1, but subject to a duty of good faith and fair dealing, the Contractor and Owner waive Claims against each other for listed damages arising out of or relating to this Contract.

- § 15.1.7.1 For the Owner, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) attorney's fees, (vii) any interest, except to the extent allowed by Section 13.5 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency.
- § 15.1.7.2 For the Contractor, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest, except to the extent allowed by Section 13.5 (Interest); (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waive as against the Owner. Without limitation, this mutual waiver is applicable to all damages due to either party's termination in accordance with Article 14.
- § 15.1.7.3 Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

## § 15.1.8 Waiver of Claims Against the Architect

Notwithstanding any other provision of the Contract Documents, including Section 1.2.1, but subject to a duty of good faith and fair dealing, the Contractor waives all claims against the Architect and any other design professionals who provide design and/or project management services to the Owner, either directly or as independent contractors or subcontractors to the Architect, for listed damages arising out of or relating to this Contract. The listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest; (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waive as against the Owner. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

- § 15.2 Reserved
- § 15.3 Reserved
- § 15.4 Reserved

## § 15.5 Claim and Disputes - Duty of Cooperation, Notice, and Architects Initial Decision

- § 15.5.1 Contractor and Owner are fully committed to working with each other throughout the Project to avoid or minimize Claims. To further this goal, Contractor and Owner agree to communicate regularly with each other and the Architect at all times notifying one another as soon as reasonably possible of any issue that if not addressed may cause loss, delay, and/or disruption of the Work. If Claims do arise, Contractor and Owner each commit to resolving such Claims in an amicable, professional, and expeditious manner to avoid unnecessary losses, delays, and disruptions to the Work.
- § 15.5.2 Claims shall first be referred to the Architect for initial decision. An initial decision shall be required as a condition precedent to resolution pursuant to Section 15.6 of any Claim arising prior to the date of final payment, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered, or after all the Architect's requests for additional supporting data have been answered, whichever is later. The Architect will not address Claims between the Contractor and persons or entities other than the Owner.
- § 15.5.3 The Architect will review Claims and within ten days of the receipt of a Claim (1) request additional supporting data from the claimant or a response with supporting data from the other party or (2) render an initial decision in accordance with Section 15.5.5.
- § 15.5.4 If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Architect when the response or supporting data will be furnished or (3) advise the Architect that all supporting data has already been provided. Upon receipt of the response or supporting data, the Architect will render an initial decision in accordance with Section 15.5.5.
- § 15.5.5 The Architect will render an initial decision in writing; (1) stating the reasons therefor; and (2) notifying the parties of any change in the Contract Sum or Contract Time or both. The Architect will deliver the initial decision to the parties within two weeks of receipt of any response or supporting data requested pursuant to Section 16.4 or within such longer period as may be mutually agreeable to the parties. If the parties accept the initial decision, the Architect shall prepare a Change Order with appropriate supporting documentation for the review and approval of the parties and the Office of State Engineer. If either the Contractor, Owner, or both, disagree with the initial decision, the Contractor and Owner shall proceed with dispute resolution in accordance with the provisions of Section 15.6.
- § 15.5.6 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.

## § 15.6 Dispute Resolution

- § 15.6.1 If a Claim is not resolved pursuant to Section 15.5 to the satisfaction of either party, both parties shall attempt to resolve the dispute at the field level through discussions between Contractor's Representative and Owner's Representative. If a dispute cannot be resolved through Contractor's Representative and Owner's Representative, then the Contractor's Senior Representative and the Owner's Senior Representative, upon the request of either party, shall meet as soon as conveniently possible, but in no case later than twenty-one (21) days after such a request is made, to attempt to resolve such dispute. Prior to any meetings between the Senior Representatives, the parties will exchange relevant information that will assist the parties in resolving their dispute. The meetings required by this Section are a condition precedent to resolution pursuant to Section 15.6.2.
- § 15.6.2 If after meeting in accordance with the provisions of Section 15.6.1, the Senior Representatives determine that the dispute cannot be resolved on terms satisfactory to both the Contractor and the Owner, then either party may submit the dispute by written request to South Carolina's Chief Procurement Officer for Construction (CPOC). Except as otherwise provided in Article 15, all Claims, or controversies relating to the Contract shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the

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South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or in the absence of jurisdiction a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the State regarding the Contract is not a waiver of either the State's sovereign immunity or the State's immunity under the Eleventh Amendment of the United States Constitution.

§ 15.6.3 If any party seeks resolution to a dispute pursuant to Section 15.6.2, the parties shall participate in non-binding mediation to resolve the Claim. If the Claim is governed by Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws as amended and the amount in controversy is \$100,000.00 or less, the CPOC shall appoint a mediator, otherwise, the mediation shall be conducted by an impartial mediator selected by mutual agreement of the parties, or if the parties cannot so agree, a mediator designated by the American Arbitration Association ("AAA") pursuant to its Construction Industry Mediation Rules. The mediation will be governed by and conducted pursuant to a mediation agreement negotiated by the parties or, if the parties cannot so agree, by procedures established by the mediator.

§ 15.6.4 Without relieving any party from the other requirements of Sections 15.5 and 15.6, either party may initiate proceedings in the appropriate forum prior to initiating or completing the procedures required by Sections 15.5 and 15.6 if such action is necessary to preserve a claim by avoiding the application of any applicable statutory period of limitation or repose.

#### § 15.6.5 Service of Process

Contractor consents that any papers, notices, or process necessary or proper for the initiation or continuation of any Claims, or controversies relating to the Contract; for any court action in connection therewith; or for the entry of judgment on any award made, may be served on Contractor by certified mail (return receipt requested) addressed to Contractor at the address provided for the Contractor's Senior Representative or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.

ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION

# USC SUPPLEMENTAL GENERAL CONDITIONS FOR CONSTRUCTION PROJECTS

## **WORK AREAS**

- 1. The Contractor shall maintain the job site in a safe manner at all times. This includes (but is not limited to) the provision and/or maintenance of lighting, fencing, barricades around obstructions, and safety and directional signage.
- 2. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies, stairs and exterior walks. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the work area. Providing safe, accessible, plywood-shielded pedestrian ways around construction may be required if a suitable alternative route is not available.
- 3. At the beginning of the project, the USC Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractor's work vehicles. The lay-down area will be clearly identified to the contractor by the Project Manager, with a sketch or drawing provided to USC Parking Services. In turn, Parking Services will mark off this area with a sign containing the project name, Project Manager's name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the Project Manager. The area will be maintained in a neat and orderly fashion.
- 4. Work vehicles parked in the lay down area (or designated parking areas) will be clearly marked and display a USC-furnished placard for identification. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site. Personal vehicles must be parked in the perimeter parking lots or garages. Temporary parking permits can be obtained at the Contractor's expense at the USC Parking Office located in the Pendleton Street parking garage. Refer to the CAMPUS VEHICLE EXPECTATIONS (below) for additional information.
- 5. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied on a regular basis. Construction waste must not be placed in University dumpsters. The construction site must be thoroughly cleaned with all trash picked up and properly disposed of on a daily basis and the site must be left in a safe and sanitary condition each day. The University will inspect job sites regularly and will fine any contractor found to be in violation of this requirement an amount of up to \$1,000 per violation.
- 6. The Contractor shall be responsible for erosion and sediment control measures where ground disturbances are made.

## PROJECT FENCING

- 7. All construction projects with exterior impacts shall have construction fencing at the perimeter. Fencing shall be 6' chain link with black or green privacy fabric (80-90% blockage). For fence panels with footed stands, sandbag weights shall be placed on the inside of the fence. Ripped sandbags shall be replaced immediately.
- 8. For projects with long fencing runs and/or high profile locations, decorative USC banners shall be used on top of privacy fabric; banners should be used at a ratio of one banner for every five fence panels. USC Project Manager will make arrangements for banner delivery for Contractor to hang.
- 9. The use of plastic safety fencing is discouraged and shall only be used on a temporary basis (less than four weeks) where absolutely necessary. Safety fencing shall be a neon yellow-green, high-

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- visibility fencing equal to 'Kryptonight' by Tenax. Safety fencing shall be erected and maintained in a neat and orderly fashion throughout the project.
- 10. Vehicles and all other equipment shall be contained within a fenced area if they are on site for more than 3 consecutive calendar days.

## **BEHAVIOR**

- 11. Fraternization between Contractor's employees and USC students, faculty or staff is strictly prohibited.
- 12. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to \$500 per violation.
- 13. Contractor's employees must adhere to the University's policy of maintaining a drug-free and tobacco-free campus.

## HAZARDOUS MATERIALS & SAFETY COMPLIANCE

- 14. A USC Permit to Work must be signed prior to any work being performed by the general contractor or sub-contractor(s).
- 15. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). Upon request, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.
- 16. Contractor must notify the University immediately upon the discovery of suspect material which may contain asbestos or other such hazardous materials. These materials must not be disturbed until approved by the USC Project Manager.
- 17. In the event of an OSHA inspection, the Contractor shall immediately call the Facilities Call Center, 803-777-4217, and report that an OSHA inspector is on site. An employee from USC's Safety Unit will arrive to assist in the inspection.

## LANDSCAPE & TREE PROTECTION

- 18. In conjunction with the construction documents, the USC Arborist shall direct methods to minimize damage to campus trees. Tree protection fencing is required to protect existing trees and other landscape features to be affected by a construction project. The location of this fence will be evaluated for each situation with the USC Arborist, Landscape Architect and Project Manager. Tree protection fencing may be required along access routes as well as within the project area itself. Fence locations may have to be reset throughout the course of the project.
- 19. The tree protection fence shall be 6' high chain link fence with 80-90% privacy screening unless otherwise approved by USC Arborist and/or Landscape Architect. If the tree protection fence is completely within a screened jobsite fence perimeter, privacy fabric is not required. In-ground fence posts are preferred in most situations for greater protection. If utility or pavement conflicts are present, fence panels in footed stands are acceptable. See attached detail for typical tree protection fencing.
- 20. No entry, vehicle parking, or materials storage will be allowed inside the tree protection zone. A 4"

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layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.

- 21. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following protective measures shall be taken:
  - a. For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over 4" of mulch.
  - b. For single loads over 9,000 lbs., two layers of 3/4" plywood shall be placed over 4" of mulch.
  - c. Plywood sheets shall be replaced as they deteriorate or delaminate with exposure.
  - d. For projects requiring heavier loads, a construction entry road consisting of 10' X 16' oak logging mats on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep matting structurally functional.
- 22. Damage to any trees during construction shall be assessed by the USC Arborist, who will stipulate what action will be taken for remediation of damage. The cost of any and all remediation will be assumed by the contractor at no additional cost to the project. Compensation for damages may be assessed up to \$500 per caliper inch of tree (up to 8") and \$500 per inch of diameter at breast height (for trees over 8").
- 23. Damage to trunks and limbs, as well as disturbance of the root zone under the dripline of tree, including compaction of soil, cutting or filling, or storage of materials, shall qualify as damage and subject to remediation.
- 24. Any damage to existing pavements or landscaping (including lawn areas and irrigation) will be remediated before final payment is made.

### TEMPORARY FACILITIES

- 25. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.
- 26. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.

## **CAMPUS KEYS**

27. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.

## **WELDING**

28. A welding (hot work) permit must be issued by the University Fire Marshall before any welding can begin inside a building. The USC Project Manager will coordinate.

## PROJECT EVALUATION & CLOSE-OUT

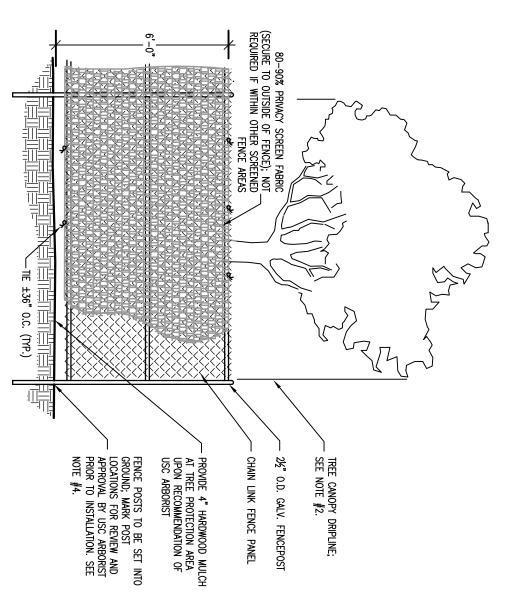
- 29. For all projects over \$100,000, including IDCs, a Contractor Performance Evaluation (SE 397) will be reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed by the USC Project Manager and a Construction Performance rating will be established.
- 30. Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until

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this is completed.

#### CAMPUS VEHICLE EXPECTATIONS

- Personal vehicles must be parked in the perimeter parking lots or garages. Temporary parking permits can be obtained at the Contractor's expense at the USC Parking Office located in the Pendleton Street parking garage.
- 32. All motorized vehicle traffic on USC walkways and landscape areas must be approved by the USC Project Manager and Parking Division, have a USC parking placard, and be parked within the approved laydown area. Violators may be subject to ticketing, towing and fines.
- 33. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.
- 34. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held responsible for damages and restoration expense.
- 35. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
- 36. All drivers of equipment and vehicles shall be respectful of University landscape, equipment, structures, fixtures and signage.
- 37. All incidents of property damage shall be reported to Parking Services or the Work Management Center.



# NOTES:

- PROVIDE PROTECTION FENCING FOR ALL TREES WITHIN AREA OF DISTURBANCE AND CONSTRUCTION ACCESS.
- 2. PROTECTION FENCING SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
- 3. PROTECTION FENCING TO BE PLACED AT THE OUTSIDE OF THE CANOPY DRIPLINE, OR AT A DISTANCE OF ONE FOOT PER ONE INCH OF TREE DIAMETER, MEASURED AT BREAST HEIGHT, WHICHEVER IS LARGER, UNLESS OTHERWISE INDICATED ON LANDSCAPE PLAN OR APPROVED BY UNIVERSITY ARBORIST.
- 4. IN—GROUND POSTS ARE STANDARD. IF EXISTING ROOTS, UTILITIES OR PAVEMENT PRECLUDE USE OF IN—GROUND POSTS, FOOTED STANDS ARE ACCEPTABLE. SAND BAGS SHALL BE PLACED ON THE INSIDE OF FENCE.
- 5. DAMAGE TO ANY TREES DURING CONSTRUCTION SHALL BE ASSESSED BY UNIVERSITY ARBORIST AND THE UNIVERSITY ARBORIST SHALL STIPULATE WHAT ACTION WILL BE TAKEN FOR REMEDIATION OF DAMAGE. THE COST OF ANY AND ALL REMEDIATION WILL BE ASSUMED BY CONTRACTOR AT NO ADDITONAL COST TO THE PROJECT.
- 6. DISTURBANCE OF ROOT ZONE UNDER DRIPLINE OF TREE, INCLUDING COMPACTION OF SOIL, CUTTING OR FILLING OR STORAGE OF MATERIALS SHALL QUALIFY AS DAMAGE AND SUBJECT TO REMEDIATION.

# **COVID-19 RETURN TO WORK**

University of South Carolina Construction site guidelines

- 1. All construction companies mobilizing for a University of South Carolina construction project must submit their regular Health & Safety Plan, as well as a site specific COVID-19 Health & Safety Plan.
- 2. All Architectural or Engineering companies that will be visiting construction sites on campus must also submit a COVID-19 Health & Safety Plan.
- 3. Contractors will be expected to have the following items (at a minimum) in their safety plans;
  - a. Before mobilizing to the project site the General Contractor will work with their U of SC Project Manager to identify one point of entry and one point of exit to the jobsite if at all possible.
  - b. The General Contractor and all Subcontractors will each have one individual from their company assigned as their COVID-19 contact point for related issues.
  - c. The General Contractor will maintain a list of all individuals who access the site each day, this list will be kept for a minimum of four weeks.
  - d. The General Contractor will NOT pass around a communal sign-in sheet to create the daily attendance list when the majority of workers are arriving each day, but will have one individual responsible for creating the list as individuals arrive.
  - e. The General Contractor will ensure that workers who arrive on site each day are healthy and have no symptoms similar to those associated with COVID-19. If a worker is symptomatic, they will immediately leave campus and follow their employer's protocol. Employees should not report to work on the U of SC campus if they have any of the symptoms that are common to those who test positive for Covid-19.
  - f. Depending on the building where the construction work is taking place, the General Contractor will arrange for the start and completion of the work day to work around the times assigned for

- passage between scheduled classes so that workers are not entering or exiting the jobsite as students are rotating classes.
- g. The General Contractor will encourage workers to stay on site for their whole shift, rather than leaving the site for lunch. The General Contractor will provide enough space for workers to take their lunch break without having to break the University mandated physical distancing guidelines or the maximum of 10 individuals together. If this requires allowing the workers to take their breaks and lunch in shifts, the General Contractor will accommodate this.
- h. The General Contractor and all Subcontractors will make every attempt to keep the same employees assigned to the same construction projects for the duration of their required scope of work. Assignments of rotating or random trades, work force personnel is highly discouraged.
- i. If feasible, depending on the jobsite and trade, the General Contractor and Subcontractors will divide their work crews into two separate groups that will work in separate areas and workers will not shift between groups once assigned. This should be done as, if a worker in one group is exposed and must self-quarantine, then the whole group must self-quarantine, however this will leave the separate work group able to continue working on the jobsite without shutting the whole jobsite down. The General Contractor may discuss the potential for achieving this by running two separate time shifts on the project with the U of SC Project Manager.
- j. The General Contractor will limit access to the jobsite trailer or office as required to maintain physical distancing guidelines whenever possible and face coverings will be worn if the 6' distance cannot be maintained.
- k. Architects and Engineers that need to access the construction site for inspections or other related tasks are requested to schedule their site visits for late in the day after construction work has ceased for the day, if at all possible.
- I. The GC will have signage posted on site reminding workers to maintain the minimum 6' physical distancing whenever possible and

- that a face covering must be worn when that distance cannot be maintained.
- m. Workers will wear gloves at all times except when the task at hand cannot be performed safely with gloves on.
- n. Regular PPE guidelines will be maintained.
- o. Face coverings should be worn by workers whenever they are on campus and traveling to or from the job site.
- p. Workers will wash their hands each day when they enter and leave the jobsite. This is the minimum requirement and more frequent hand washing is recommended.
- q. The General Contractor/Subcontractor will provide individual bottles of water for workers on site and NOT a cooler for communal use.
- r. The General Contractor and all subcontractors should avoid having workers share tools wherever possible. If it is not possible to avoid, then tools should be cleaned before and after each individual use.
- s. The General Contractor and all subcontractors should avoid having employees share company vehicles wherever possible. If it is not possible to avoid, then the vehicle should be cleaned before and after each individual use.
- t. The General Contractor and all subcontractors will maintain a clean jobsite and trash will be removed on a daily basis by an individual who is wearing gloves and a face covering.
- u. The GC will ensure that the portable restroom facilities are sanitized daily.
- v. If a worker who has been on a U of SC construction site within the past 14 days is found to test positive for COVID-19, the General Contractor will *immediately* notify the U of SC Project Manager and advise which days the worker was on site and if the exposure appears to be work related on non-work related.
- w. If the GC or any of their subcontractors are advised by one of their employees that they have been potentially exposed to Covid-19 within the previous 14 days and they have been advised to self-quarantine, and that employee has been on a project site at the U of SC campus within that same 14 day period the employer must notify

- the U of SC Project Manager and advise what days their employee was on site.
- x. If any individual who has been on the project jobsite is found to have tested positive for Covid-19, the construction site will be shut down immediately for thorough cleaning by the General Contractor.

Project Name: UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS

Project Number: H34-9517 University of South Carolina

# **CONTRACTOR'S ONE YEAR GUARANTEE**

STATE OF
COUNTY OF
WE
as General Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;
Defects or failures resulting from abuse by Owner.
Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.
[Name of Contracting Firm]
*By
Title
*Must be executed by an office of the Contracting Firm.
SWORN TO before me this
day of, 2 (seal)
State
My commission expires

# **SE-355**

# PERFORMANCE BOND

	MEN BY THESE PRESENTS, that (Insert full	
Name: Address:		
11001055.		
hereinafter ref	ferred to as "Contractor", and (Insert full name and	address of principal place of business of Surety)
Name:		
Address:		
		and firmly bound unto (Insert full name and address of Agency)
Name:	· -	
Address:	1300 Pickens Street	
1	Columbia, SC 29208	
of the Bond to	o which payment to be well and truly made, to, successors and assigns, jointly and severally,	the Contractor and Surety bind themselves, their heirs, executors, firmly by these presents.
WHEREAS,	Contractor has by written agreement dated	entered into a contract with Agency to construct
		URCE CENTER RENOVATIONS
State Proj	ject Number: <u>H34-9517</u>	
modi	scription of Awarded Work: The project of fications, including lighting, power, fire alarmence desk casework are also included.	consists of interior selective demolition and wall and ceiling m, and HVAC. New ceilings, stair railings, and circulation and
in accordance	with Drawings and Specifications prepared by	(Insert full name and address of A/E)
Name:	Jumper Carter Sease Architects	
Address:	412 Meeting Street	
	West Columbia, SC 29169	
which agreem	ent is by reference made a part hereof, and is he	ereinafter referred to as the Contract.
		ag to be legally bound hereby, subject to the terms stated herein, do behalf by its authorized officer, agent or representative.
DATED this	day of . 2	BOND NUMBER_
(si	day of, 2hall be no earlier than Date of Contract)	
CONTRACT	OR	SURETY
Bv:		By:
	(Seal)	(Seal)
Print Name:		Print Name:
Print Title:		Print Title:
		(Attach Power of Attorney)
Witness:		Witness:

(Additional Signatures, if any, appear on attached page)

# PERFORMANCE BOND

#### NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

- 1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency for the full and faithful performance of the contract, which is incorporated herein by reference.
- 2. If the Contractor performs the contract, the Surety and the Contractor have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
- 3. The Surety's obligation under this Bond shall arise after:
- 3.1 The Agency has notified the Contractor and the Surety at the address described in paragraph 10 below, that the Agency is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If the Agency, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Agency's right, if any, subsequently to declare a Contractor Default; or
- **3.2** The Agency has declared a Contractor Default and formally terminated the Contractor's right to complete the Contract.
- **4.** The Surety shall, within 15 days after receipt of notice of the Agency's declaration of a Contractor Default, and at the Surety's sole expense, take one of the following actions:
- **4.1** Arrange for the Contractor, with consent of the Agency, to perform and complete the Contract; or
- **4.2** Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
- 4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Agency for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Agency and the contractor selected with the Agency's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the Agency the amount of damages as described in paragraph 7 in excess of the Balance of the Contract Sum incurred by the Agency resulting from the Contractor Default: or
- **4.4** Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and:
  - **4.4.1** After investigation, determine the amount for which it may be liable to the Agency and, within 60 days of waiving its rights under this paragraph, tender payment thereof to the Agency; or
  - **4.4.2** Deny liability in whole or in part and notify the Agency, citing the reasons therefore.
- **5.** Provided Surety has proceeded under paragraphs 4.1, 4.2, or 4.3, the Agency shall pay the Balance of the Contract Sum to either:
- **5.1** Surety in accordance with the terms of the Contract; or
- **5.2** Another contractor selected pursuant to paragraph 4.3 to perform the Contract.
- **5.3** The balance of the Contract Sum due either the Surety or another contractor shall be reduced by the amount of damages as described in paragraph 7.
- 6. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond 15 days after receipt of written notice from the Agency to the Surety demanding that the Surety perform its obligations under this Bond, and the Agency shall be entitled to enforce any remedy available to the Agency.

- **6.1** If the Surety proceeds as provided in paragraph 4.4 and the Agency refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Agency shall be entitled to enforce any remedy available to the Agency.
- **6.2** Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the Dispute Resolution process defined in the Contract Documents and the laws of the State of South Carolina.
- 7. After the Agency has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Agency shall be those of the Contractor under the Contract, and the responsibilities of the Agency to the Surety shall those of the Agency under the Contract. To a limit of the amount of this Bond, but subject to commitment by the Agency of the Balance of the Contract Sum to mitigation of costs and damages on the Contract, the Surety is obligated to the Agency without duplication for:
- **7.1** The responsibilities of the Contractor for correction of defective Work and completion of the Contract; and
- 7.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and
- 7.3 Damages awarded pursuant to the Dispute Resolution Provisions of the Contract. Surety may join in any Dispute Resolution proceeding brought under the Contract and shall be bound by the results thereof; and
- **7.4** Liquidated Damages, or if no Liquidated Damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- **8.** The Surety shall not be liable to the Agency or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Sum shall not be reduced or set-off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Agency or its heirs, executors, administrators, or successors.
- **9.** The Surety hereby waives notice of any change, including changes of time, to the contract or to related subcontracts, purchase orders and other obligations.
- **10.** Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the address shown on the signature page.
- 11. Definitions
- 11.1 Balance of the Contract Sum: The total amount payable by the Agency to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts to be received by the Agency in settlement of insurance or other Claims for damages to which the Contractor si entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.
- 11.2 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform the Contract or otherwise to comply with the terms of the Contract.

# **SE-357**

# LABOR & MATERIAL PAYMENT BOND

(Additional Signatures, if any, appear on attached page)

KNOW ALL MEN BY THESE PRESENTS, that (Insert full	l name or legal title and address of Contractor)
Name:	
Address:	
handan afamada a "Cantanata" and da a da	
hereinafter referred to as "Contractor", and (Insert full name and Name:	
Address:	
hereinafter called the "surety", are jointly and severally held	and firmly bound unto (Insert full name and address of Agency)
Name: <u>University of South Carolina</u>	
Address: 1300 Pickens Street	
Columbia, SC 29208	
	the Contractor and Surety bind themselves, their heirs, executors, firmly by these presents.
WHEREAS, Contractor has by written agreement dated	entered into a contract with Agency to construct
State Project Name: <u>UPSTATE INFORMATION RESO</u>	OURCE CENTER RENOVATIONS
State Project Number: <u>H34-9517</u>	
Brief Description of Awarded Work: The project of	consists of interior selective demolition and wall and ceiling
modifications, including lighting, power, fire alarmeterence desk casework are also included.	m, and HVAC. New ceilings, stair railings, and circulation and
in accordance with Drawings and Specifications prepared by	(Insert full name and address of A/F)
Name: Jumper Carter Sease Architects	(113011)1111 11111111 1111111111111111111
Address: 412 Meeting Street	
West Columbia, SC 29169	
which agreement is by reference made a part hereof, and is he	ereinafter referred to as the Contract
which agreement is by reference made a part hereof, and is in	cromater referred to as the confident.
	ng to be legally bound hereby, subject to the terms stated herein, do duly executed on its behalf by its authorized officer, agent or
DATED this day of, 2	BOND NUMBER
CONTRACTOR	SURETY
By:	By:
(Seal)	(Seal)
Print Name:	Print Name:
Print Title:	Print Title:(Attach Power of Attorney)
	(Much I ower of Anorney)
Witness:	Witness:

# LABOR & MATERIAL PAYMENT BOND

#### NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

- 1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.
- 2. With respect to the Agency, this obligation shall be null and void if the Contractor:
- 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
- 2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.
- **3**. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
- **4.** With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:
- 4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.
- **4.2** A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.
- 4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of o ne year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.
- **5.** When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
- 5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
- **5.2** Pay or arrange for payment of any undisputed amounts.
- 5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.

- **6.** Amounts owed by the Agency to the Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the Contractor furnishing and the Agency accepting this Bond, they agree that all funds earned by the contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Agency's prior right to use the funds for the completion of the Work.
- 7. The Surety shall not be liable to the Agency, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Agency shall not be liable for payment of any costs or expenses of any claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
- **8.** The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
- 9. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the Agency or the contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
- 10. By the Contractor furnishing and the Agency accepting this Bond, they agree that this Bond has been furnished to comply with the statutory requirements of the South Carolina Code of Laws, as amended, and further, that any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
- 11. Upon request of any person or entity appearing to be a potential beneficiary of this bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
- 12. Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the laws of the State of South Carolina.

#### 13. DEFINITIONS

- 13.1 Claimant: An individual or entity having a direct contract with the Contractor or with a Subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and the Contractor's Subcontractors, and all other items for which a mechanic's lien might otherwise be asserted.
- **13.2** Remote Claimant: A person having a direct contractual relationship with a subcontractor of the Contractor or subcontractor, but no contractual relationship expressed or implied with the Contractor.
- **13.3** Contract: The agreement between the Agency and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

**SE-380** CHANGE ORDER NO.:\_\_\_\_

СН	CHANGE ORDER TO DESIGN-BID-BUILD CONSTRUCTION CONTRACT				
AGI	ENCY: University of South Carolina				
PRO	DJECT NAME: <u>UPSTATE INFORMATION RESOURCE CENT</u>	TER RENOVA	ΓΙΟΝS		
PRO	DJECT NUMBER: H34-9517				
CON	TRACTOR:	_ CONTRACT	DATE:		
This (	Contract is changed as follows: (Insert description of change in space provided below)				
AD	JUSTMENTS IN THE CONTRACT SUM:				
1.	Original Contract Sum:		\$		
2.	Change in Contract Sum by previously approved Change Orders:				
3.	Contract Sum prior to this Change Order		\$ 0.00		
4.	Amount of this Change Order:				
5.	New Contract Sum, including this Change Order:		\$ 0.00		
AD:	IUSTMENTS IN THE CONTRACT TIME:				
1.	Original Substantial Completion Date:				
2.	Sum of previously approved increases and decreases in Days:		Days		
3.	Change in Days for this Change Order		Days		
4.	Total Number of Days added to this Contract including this Change Order		0 Days		
5.	New Substantial Completion Date:		-		
CON	TRACTOR ACCEPTANCE:				
BY	:	Date:			
	(Signature of Representative)				
Pri	int Name of Representative:				
<u>A/E</u> F	RECOMMENDATION FOR ACCEPTANCE:				
BY	:	Date:			
	(Signature of Representative)				
Pri	int Name or Representative:				
AGE!	NCY ACCEPTANCE AND CERTIFICATION: tify that the Agency has authorized, unencumbered funds available for obligation to this contract.				
BY	:	Date:			
	(Signature of Representative)				
	int Name of Representative:  ge is within Agency Construction Contract Change Order Certification of:  \$				
	*				
APPF	ROVED BY:	DATE:			
	(OSE Project Manager)				

- SUBMIT THE FOLLOWING TO OSE

  1. SE-380, fully completed and signed by the Contractor, A/E and Agency;
  2. Detailed back-up information, with OH&P shown, from the Contractor/Subcontractor(s) that justifies the costs and schedule changes shown.
  3. If any item exceeds Agency certification, OSE will approved the SE-380 and return to Agency.

PROJECT TITLE PAGE

**OWNER** University of South Carolina

> 1300 Pickens Street Columbia, SC 29208 P (803) 777-5811

Attention: Ms. Ann Derrick

**ARCHITECT** Jumper Carter Sease Architects, PA

412 Meeting Street

West Columbia, SC 29169

P (803) 791-1020

Attention: Mr. Darryn Bouknight, AIA

**MECHANICAL Swygert Associates** 1315 State St **ENGINEER** 

Cayce, SC 29033 P (803) 791-9300

Attention: Mr. Todd Swygert, PE

**ELECTRICAL** Sims Group Engineering

800 Columbiana Drive; Suite 208 **ENGINEER** 

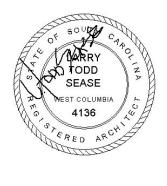
Irmo, SC 29063 P (803) 765-1007

Attention: Mr. Benny McDaniel, PE

**END OF SECTION** 

PROJECT TITLE PAGE 00 0101-Page 1 of 1





SEALS PAGE 00 0107 - Page 1 of 1

STATE PROJECT NO.: H34-9517 INDEX OF DRAWINGS

# 1.0 GENERAL

1.1 Drawings Accompanying Specifications: The following Drawings bearing
Architect's Commission No. **18104** dated **December 4, 2020**, and entitled **UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS**, accompany this specification and is a part thereof:

T101	TITLE SHEET
D101 D102 A300 A301 A302 A501 A601 A602 A901 A902	FIRST FLOOR DEMOLITION PLAN SECOND FLOOR DEMOLITION PLAN BASEMENT FLOOR PLAN / REFLECTED CEILING PLAN FIRST FLOOR PLAN SECOND FLOOR PLAN FINISH SCHED. / DOOR SCHED. / DOOR & FRAME TYPES & DETAILS ALTERNATE NO. 1: STAIR DETAILS ALTERNATE NO. 2: CASEWORK ELEVATIONS & DETAILS FIRST FLOOR REFLECTED CEILING PLAN SECOND FLOOR REFLECTED CEILING PLAN
MD101 MD102 M100 M101 M102 M201	FIRST FLOOR DEMOLITION PLAN SECOND FLOOR DEMOLITION PLAN BASEMENT FLOOR PLAN FIRST FLOOR PLAN SECOND FLOOR PLAN DETAILS, NOTES, SCHEDULE, AND LEGEND
E001 E101 E102 E201 E202 E203 E601	ELECTRICAL SYMBOLS AND NOTES FIRST FLOOR LIGHTING PLAN SECOND FLOOR LIGHTING PLAN BASEMENT POWER PLAN FIRST FLOOR POWER PLAN SECOND FLOOR POWER PLAN PARTIAL POWER RISER DIAGRAM & SCHEDULES

**END OF SECTION** 

INDEX OF DRAWINGS 00 85 00 - Page 1 of 1

#### 1.0 GENERAL

The provisions of the Instruction to Bidders and of the Special Conditions, General Conditions, and Supplementary Conditions of these Specifications shall govern the work under this Division or Section the same as if incorporated herein.

# 1.1 QUALITY ASSURANCE

Qualifications of Manufacturers: Products used in the Work shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Architect/Engineer.

Qualifications of Workmen: Use adequate numbers of workmen who are thoroughly trained and experienced in the necessary skills, completely familiar with the manufacturer's recommended methods of application and completely familiar with the specific requirements of the work.

Codes and Standards: Comply with the 2018 Edition of the International Building Code or other Governing Local Codes and Standard. Comply also with all instructions and recommendations from the manufacturers of various materials. Notify Architect immediately of any systems which do not comply with the 2018 International Building Code or any local codes that may be more stringent.

#### 1.2 PRODUCT HANDLING

Delivery and Storage:

Deliver all packaged materials to the job site in their original unopened containers with all labels intact and legible at time of inspection.

Store all materials in an approved manner.

Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the Owner.

### 1.3 SCHEDULING AND COORDINATION

All work shall be scheduled and coordinated with the Owner.

# 1.4 MATERIAL AND WORKMANSHIP

Fitting Job Conditions: The Contractor and material suppliers shall be responsible for inspecting all job conditions affecting the installation of an item and taking all field measurements required prior to fabrication of an item to insure that the item concerned will integrate properly with all adjacent materials and fit all other conditions as they exist or will exist in the finished project.

# 1.5 CODES AND LAWS

All construction will comply with the latest edition of the 2018 International Building Code, National Fire Protection Association Code, Section 504 of the Rehabilitation Act of 1973 and all general and permanent Laws of the State of South Carolina. The Owner places major emphasis on the safety and well-being of its students, faculty and staff. It is the first duty of supervisors and all other persons in authority to provide for safety and fire prevention.

# 1.6 OCCUPATIONAL SAFETY AND HEALTH

The construction shall be governed, at all times, by applicable provisions of the Federal Law(s), including but not limited to the following, as amended to date.

Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596.

Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations; and

Part 1518 - Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

**END OF SECTION** 

#### PART 1 - GENERAL

STATE PROJECT NO.: H34-9517

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Work covered by the Contract Documents.
  - 2. Use of premises.
  - 3. Owner's occupancy requirements.
  - 4. Specification formats and conventions.

#### 1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS

The project consists of interior selective demolition and wall and ceiling modifications, including lighting, power, fire alarm, and HVAC. New ceilings, stair railings, and circulation and reference desk casework are also included.

- B. Project Location: USC Upstate, 150 GRAMLING DR, SPARTANBURG, SC 29303
- C. Owner: University of South Carolina
  - 1. Owner's Representative: Ms. Ann Derrick, Project Manager
- D. The project will be constructed by the successful responsive responsible General Contractor through a public bid process.

#### 1.3 WORK UNDER OTHER CONTRACTS

A. Concurrent Work: Owner may elect to award separate contract(s) for other construction operations at Project site. Those operations may be conducted simultaneously with work under this Contract. Coordinate work with separate contract to facilitate installation of new work and avoid scheduling conflicts.

#### 1.4 USE OF PREMISES

- A. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Owner Occupancy: Allow for Owner and Owner Contractors occupancy of Project site as required to complete scopes of work.
  - 2. Driveways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

SUMMARY 01 1000 - Page 1 of 2

SUMMARY

### 1.6 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 33-division format and CSI/CSC's "MasterFormat" 2011 Version numbering system.
  - 1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  - Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SUMMARY 01 1000 - Page 2 of 2

ALLOWANCES

#### 1.0 GENERAL

- 1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract including General & Supplementary Conditions and other Division-1 specification sections, apply to work of this section.
- 1.2 SCOPE: This section describes the allowances that are to be included in the contractor's bid and entered on the Form of Proposal
- 1.3 ALLOWANCE: The following allowances to be used as directed by Architect. Any unused portion of these allowances shall be credited to the Owner at the completion of the work. These allowances shall be considered actual costs and the contractor's profit, insurance, taxes, installation cost, and protection of installed products, will be figured in the bids, except as otherwise noted.

#### 1.4 **FINISH HARDWARE**:

\$6,000.00 Including SC Sales Tax and Installation.

NOTE: Allowance money shall be used as directed by the Owner/Architect for the work listed and/or other work as deemed necessary for a successful project by the Owner.

**END OF SECTION** 

ALLOWANCES 01 2100 - Page 1 of 1

ALTERNATES

#### **PART 1 - GENERAL**

#### 1.01 DESCRIPTION

A. Work Includes: Provide alternative bid proposals as described in this Section.

#### B. Related Documents:

 Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and all applicable Sections in Division 1 of these Specifications.

#### C. Procedures:

- 1. Provide alternative bids to be added to or deducted from the amount of the Base Bid if the corresponding change in scope is accepted by the Owner.
- 2. Include within the alternative bid prices all costs, including materials, submittals, installation, and fees to provide a complete, operable and finished system.
- 3. Show the proposed alternative amounts opposite their proper description on the Bid Form.
- See Plans and Subparagraph 1.01.D of this specification for a description of alternates.
- D. Alternative bid pricing is requested for the following:

#### **ALTERNATE #1**:

This alternate shall include all work associated with the new stair handrail/guardrail system with associated demolition of existing system per the contract documents.

#### **ALTERNATE # 2**:

This alternate shall include all work associated with the new Circulation Desk and Reference Desk casework with associated electrical work per the contract documents.

**END OF SECTION** 

ALTERNATES 01 2300 - Page 1 of 1

#### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

#### B. Related Section:

1. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

#### 1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use facsimile of form provided in the Project Manual.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. Certificates and qualification data, where applicable or requested.
    - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
    - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided

SUBSTITUTION PROCEDURES

within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

- k. Cost information, including a proposal of change, if any, in the Contract Sum.
- I. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
- Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
  - a. Forms of Acceptance: Addendum, Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

#### 1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

# PART 2 - PRODUCTS

#### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Requested substitution will not adversely affect Contractor's construction schedule.
    - c. Requested substitution has received necessary approvals of authorities having iurisdiction.
    - d. Requested substitution is compatible with other portions of the Work.
    - e. Requested substitution has been coordinated with other portions of the Work.
    - f. Requested substitution provides specified warranty.
    - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

SECTION 01 2500 SUBSTITUTION PROCEDURES

Substitutions for Convenience: Not allowed, unless otherwise indicated or approved prior to the B. bid opening.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SUBSTITUTION REQUEST FORM

FOLLOWING IS A SAMPLE FORMAT FOR SUBMISSION OF REQUEST FOR APPROVAL OF SUBSTITUTES. SUBMISSION SHALL BE MADE IN DUPLICATE ON BIDDER'S LETTERHEAD FOR EACH SUBSTITUTE ITEM. MAKE SEPARATE SUBMISSION FOR EACH SUBSTITUTE ITEM.

REQUEST FOR PRIOF	R APPROVAL OF A SUBSTITUTE:
PROJECT NO:	18104
TITLE:	UPSTATE INFORMATION RESOURCE CENTER RENOVATIONS
PROJECT LOCATION:	USC Upstate, 150 GRAMLING DR, SPARTANBURG, SC 29303
SPECIFICATION OR D	RAWING REFERENCE: SECTION
NOPAGE_	
PARAGRAPHD	RAWING NO
SPECIFIED ITEM	·
SUBMITTED ITEM	
MANUFACTURER	
LIST OF 3 INSTALLAT	ONS
(GIVE PROJECT NAMI	E AND LOCATION)
DIFFERENCE BETWE	EN SPECIFIED ITEM AND SUBMITTED ITEM, IF ANY:
	IY, (SEE PARAGRAPH ENTITLED "REQUEST FOR PRIOR
SIGNED	DATE
NAME AND ADDRESS	OF FIRM

#### PART 1 - GENERAL

#### 1.1 SUMMARY

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

#### 1.2 MINOR CHANGES IN THE WORK

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

#### 1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - 4. Include costs of labor and supervision directly attributable to the change.

- 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- 6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system specified.
- 7. Proposal Request Form: Use form acceptable to Architect.

#### 1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: Refer to Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit Price Adjustment: Refer to Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

#### 1.5 CHANGE ORDER PROCEDURES

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

#### 1.6 CONSTRUCTION CHANGE DIRECTIVE

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

# **END OF SECTION 01 2600**

#### PART 1 - GENERAL

# 1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

#### 1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
  - 3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments; provide sub-schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Arrange schedule of values consistent with format of AIA Document G703.
  - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of Contract Sum.
    - a. Include separate line items under Contractor and principal subcontracts and other project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
  - 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  - 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

PAYMENT PROCEDURES

- 6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
- 8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
- 9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Progress payments shall be submitted to Architect by the 25<sup>th</sup> day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C. Application for Payment Forms: Use AIA Document G702/CMa and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Unless directed otherwise, submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
  - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
  - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

PAYMENT PROCEDURES

- 2. When an application shows completion of an item, submit conditional final or full waivers.
- 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
- 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Schedule of values.
  - 3. Contractor's construction schedule (preliminary if not final).
  - 4. Schedule of unit prices.
  - 5. Submittal schedule (preliminary if not final).
  - 6. List of Contractor's staff assignments.
  - 7. List of Contractor's principal consultants.
  - 8. Copies of building permits.
  - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  - 10. Initial progress report.
  - 11. Report of preconstruction conference.
  - 12. Certificates of insurance and insurance policies.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  - 3. Updated final statement, accounting for final changes to the Contract Sum.
  - 4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
  - 5. AIA Document G706A-1994. "Contractor's Affidavit of Release of Liens."
  - 6. AIA Document G707-1994, "Consent of Surety to Final Payment."
  - 7. Evidence that claims have been settled.
  - 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

SECTION 01 2900 PAYMENT PROCEDURES

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination drawings.
  - 2. Requests for Information (RFIs).
  - 3. Project meetings.

# B. Related Sections:

- 1. Division 01 Section "Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
- 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
- 3. Division 23 Section "HVAC, Ductwork" for general installation, coordination drawings and efforts required with other trades adjacent to ductwork.

### 1.2 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

#### 1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

- 1. Preparation of Contractor's construction schedule.
- 2. Preparation of the schedule of values.
- 3. Installation and removal of temporary facilities and controls.
- 4. Delivery and processing of submittals.
- 5. Progress meetings.
- 6. Pre-installation conferences.
- 7. Project closeout activities.
- 8. Startup and adjustment of systems.
- 9. Project closeout activities.

# 1.4 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified. This is to occur only after the Contractor has thoroughly reviewed the contract documents before submitting.
  - 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
  - 1. Project name.
  - 2. Project number.
  - 3. Date.
  - 4. Name of Contractor.
  - 5. Name of Architect.
  - 6. RFI number, numbered sequentially.
  - 7. RFI subject.
  - 8. Specification Section number and title and related paragraphs, as appropriate.
  - 9. Drawing number and detail references, as appropriate.
  - 10. Field dimensions and conditions, as appropriate.
  - 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  - 12. Contractor's signature.
  - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: AIA Document G716 or General Contractor's software-generated form with substantially the same content as indicated above, acceptable to Architect. Form type will be determined at the Pre-construction Conference.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
  - 1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.

- c. Requests for coordination information already indicated in the Contract Documents.
- d. Requests for adjustments in the Contract Time or the Contract Sum.
- e. Requests for interpretation of Architect's actions on submittals.
- f. Incomplete RFIs or inaccurately prepared RFIs.
- 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
- 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
  - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Maintain the log on a daily basis and make available for view to the architect at any time requested. Submit log monthly. Include the following:
  - 1. Project name.
  - 2. Name and address of Contractor.
  - 3. Name and address of Architect.
  - 4. RFI number including RFIs that were dropped and not submitted.
  - 5. RFI description.
  - 6. Date the RFI was submitted.
  - 7. Date Architect's response was received.
  - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  - 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

# 1.5 PROJECT MEETINGS

- A. General: General Contractor will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, General Contractor, and Architect, within three days of the meeting. The architect will provide minutes of the weekly progress meeting(s) for those meetings attended by the architect along and related project field reports, however, this does not release the contractor from his responsibility of providing minutes or any other communication measures required to properly manage the construction.

- B. Preconstruction Conference: General Contractor will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
  - Attendees: Authorized representatives of Owner, the Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Discuss items of significance that could affect progress, including the following:
    - Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for RFIs.
    - g. Procedures for testing and inspecting.
    - h. Procedures for processing Applications for Payment.
    - i. Distribution of the Contract Documents.
    - j. Submittal procedures.
    - k. Sustainable design requirements.
    - I. Preparation of record documents.
    - m. Use of the premises.
    - n. Work restrictions.
    - o. Working hours.
    - p. Owner's occupancy requirements.
    - q. Responsibility for temporary facilities and controls.
    - r. Procedures for moisture and mold control.
    - s. Procedures for disruptions and shutdowns.
    - t. Construction waste management and recycling.
    - u. Parking availability.
    - v. Office, work, and storage areas.
    - w. Equipment deliveries and priorities.
    - x. First aid.
    - y. Security.
    - z. Progress cleaning.
  - 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, and the Commissioning Authority, of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.

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

PROJECT MANAGEMENT AND COORDINATION

- 6) Access.
- 7) Site utilization.
- 8) Temporary facilities and controls.
- 9) Progress cleaning.
- 10) Quality and work standards.
- 11) Status of correction of deficient items.
- 12) Field observations.
- 13) Status of RFIs.
- 14) Status of proposal requests.
- 15) Pending changes.
- 16) Status of Change Orders.
- 17) Pending claims and disputes.
- 18) Documentation of information for payment requests.
- 3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
  - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

## PART 1 - GENERAL

## 1.1 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

#### B. Related Sections:

- 1. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
- 2. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
- 3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

# 1.3 ACTION SUBMITTALS

A. Submittal Schedule: GENERAL CONRACTOR SHALL Submit a schedule of submittals, arranged in specification sections and listing estimated dates required by construction schedule. This schedule will serve as a master list for ongoing submittal log.

#### B. SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- C. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings may be provided by Architect upon contractor's request for Contractor's use in preparing submittals.
  - 1. Architect may furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
    - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
    - c. The architectural drawings for shop drawing purposes may be furnished upon the architect's receipt of the Licensing Agreement and upon receipt of payment equal to \$1,500.00 per Revit Model. The purchaser is responsible for adding all addenda items and changes and providing/verifying field measurements.
    - d. Drawings of the architect's consultants may not be available.
    - e. The architect reserves the right to reject any request or digital drawing files.

- D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - Architect and Consultants reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- E. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
  - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination. For items requiring color selections, Contractor shall provide actual material color samples for Architects review and selection at the time of shop drawing submittal.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Re-submittal Review: Allow 15 days for review of each re-submittal.
- F. Identification and Information: Submittals for Shop Drawings and Product Data will be accepted by the Architect and Engineers in Electronic Format unless specifically requested to be submitted in hard copy. Place a label or title block on each transmittal with submittal item for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
  - 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  - 3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of subcontractor.
    - f. Name of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - I. Other necessary identification.

- G. Options: Identify options requiring selection by the Architect.
- H. Deviations: Identify deviations from the Contract Documents on submittals.
- I. Additional Paper Copies: Unless additional copies are required by, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- J. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, or discard submittals received from sources other than Contractor.
  - 1. Transmittal Form: Use AIA Document G810 or other form acceptable to the architect. Indicate specification section submittal is applicable to on the transmittal.
  - On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- K. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- L. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms. Maintain electronic copies of all approved submittals and shop drawings at the job site to be available for review by Authority having Jurisdiction and Third Party Inspectors.
- M. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

### PART 2 - PRODUCTS

## 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
  - Action Submittals: All submittals that pertain to product data, product information, warranties, etc. may be submitted electronically to the Architect's contact. If submittals include shop drawings, submit two paper copies for review, unless otherwise instructed by the Architect or Engineers of Record. If submittal requires a color selection, provide actual samples for color selection along with submittal. Architect may reject the submittal if the submittal is not complete.
  - 2. Informational Submittals: All submittals that pertain to product data, product information, warranties, etc. may be submitted electronically to the Architect's contact.
  - 3. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

SUBMITTAL PROCEDURES

- 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  - a. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- 5. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before or concurrent with Samples.
  - 6. Submit Product Data in the following format:
    - a. Three paper copies of Product Data, unless otherwise indicated. Architect will return two copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.

- 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1067 mm).
- 3. Submit Shop Drawings in the following format:
  - Electronic Copy in PDF format for initial review.
  - If requested by architect or engineer hard copies will be submitted in number b. requested up to 3 copies.
  - After electronic review and return of submittal, hard copies may be requested by C. architect and/or engineer for records.
  - Physical samples representing color or material selections are to be submitted with d. shop drawings if color or material selections are required by the shop drawing.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of Samples that includes the following:
    - Generic description of Sample.
    - Product name and name of manufacturer. b.
    - Sample source. C.
    - d Number and title of applicable Specification Section.
  - Disposition: Maintain sets of approved Samples at Project site, available for quality-3. control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time
    - Samples not incorporated into the Work, or otherwise designated as Owner's b. property, are the property of Contractor.
  - 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - Number of Samples: Submit three full set(s) of available choices where color, a. pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
  - Samples for Verification: Submit full-size units or Samples of size indicated, prepared 5. from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - Number of Samples: Submit three sets of Samples. Architect will retain two a. Sample sets; remainder will be returned.

SUBMITTAL PROCEDURES

- 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least five sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  - 1. Submit product schedule in the following format:
    - a. Three paper copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.
  - 1. Submit subcontract list in the following format:
    - a. PDF electronic file.
    - b. Number of Copies: Three paper copies of subcontractor list, unless otherwise indicated. Architect will return two copies.
- J. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.
- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

SUBMITTAL PROCEDURES

- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- T. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- W. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- X. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

### 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit electronic copy of certificate with the submittal, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

SUBMITTAL PROCEDURES

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

### PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

## 3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 3300

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. This Section includes administration and procedural requirements for compliance with the 2018 IBC, Chapter 1 Inspections and Chapter 17 Special Inspections.
- C. South Carolina Office of State Engineers (OSE) "MANUAL FOR PLANNING & EXECUTION OF STATE PERMANENT IMPROVEMENTS PART II", 2020 EDITION or latest edition.

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Pre-construction Conference: Upon receipt of the "Notice-to-Proceed" and prior to the start of construction, the contractor shall conduct a Pre-construction Conference. It is the responsibility if the construction manager to notify the architect of the date and time of this conference in a timely manner so that the architect can notify the Office of State Engineers (OSE). A representative from OSE along with representatives from the testing company(ies) and the Chapter 1 and Chapter 17 inspection agencies must be present.
- D. Related Sections include the following:
  - 1. Division 1 Section "Construction Progress Schedule" for developing a schedule of required tests and inspections. The special inspector shall continually coordinate with the construction manager for the time and requirements of required inspections.
  - 2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 3. Divisions 2 through 33 Sections for specific test and inspection requirements.

## 1.3 DEFINITIONS

- A. Agency Approval: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by South Carolina Office of State Engineers (OSE).
- B. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- C. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- D. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- E. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- F. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- G. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- H. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- I. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- J. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- K. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- L. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five (5) previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.
- C. The special inspector's reports and testing agencies results shall have precedence over reports and test results provided by the contractor.
- D. Where conflict exists between the construction documents and approved shop drawings submittal data, the construction documents shall govern unless the shop drawing/submittal data are more restrictive. All conflicts shall be brought to the attention of the architect.

### 1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Recognized Agency: For the purposes of this work, only companies utilizing certified inspectors as designated by the South Carolina Office of the State Engineer will be accepted for these special inspections. These Companies are listed on their web site however may not be current. Documentation of the individual's certificates scheduled to perform inspections for this project must be submitted for review by the architect prior to award of this work.
- C. Special Inspectors shall keep and distribute records of inspections. The special inspector shall furnish inspection reports to OSE, contractor, architect and owner. Reports shall indicate that work inspected was done in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of OSE and to the architect prior to the completion of the phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and OSE. Prior to the start of work.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Description of test and inspection.
  - 3. Identification of applicable standards.
  - 4. Identification of test and inspection methods.
  - 5. Number of tests and inspections required.
  - 6. Time schedule or time span for tests and inspections.
  - 7. Entity responsible for performing tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.

- E. Reports: Prepare and submit certified written reports that include, but are not limited to, the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and re-inspecting.
- F. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

# 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
  - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect through the Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
  - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect or Construction Manager.
  - 2. Notify Architect and Construction Manager seven (7) days in advance of dates and times when mockups will be constructed.
  - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
  - 4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven (7) days for initial review and each re-review of each mockup.
  - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  - 6. Demolish and remove mockups when directed, unless otherwise indicated.

K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 33.

### 1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  - Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  - 2. Notify testing agencies at least Forty Eight (48) hours in advance of time when Work that requires testing or inspecting will be performed.
  - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
  - 6. The contractor shall be responsible for costs of: Re-testing and re-inspection of materials, work and/or products that do not meet requirements of the construction documents and shop drawings/submittal data.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with the Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

- 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
- 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
- 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Delivery of samples to testing agencies.
  - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - Security and protection for samples and for testing and inspecting equipment at Project site
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within thirty (30) days of date established for commencement of the Work the Notice to Proceed.
  - 1. Distribution: Distribute schedule to Owner, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

# 1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Shall be as listed herein.
- B. Special Tests and Inspections: Conducted by a qualified special inspector designated by the South Carolina Office of State Engineers (OSE) as indicated in individual Specification Sections, and as follows:
  - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  - 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, with copy to Contractor and to authorities having jurisdiction.
  - 4. Submitting a final report of special tests and inspections at Substantial Completion which includes a list of unresolved deficiencies.
  - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  - 6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

## 3.1 ACCEPTABLE TESTING AGENCIES

Acceptable companies shall be as designated by the South Carolina Office of State Engineers (OSE).

## 3.2 SPECIAL INSPECTIONS REQUIRED CHAPTER 17:

- A. Seismic Design Category: The Seismic Design Category for this project is "C".
- B. Facility Classification: As stated in Section 1604.5 of the 2018 IBC, this facility is classified as a "Non-Essential Facility".
- C. IBC 2018 Chapter 17 Inspections, INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

STATEMENT OF SPECIAL INSPECTIONS							
MATERIAL	TYPE OF INSPECTION	FREQUENCY	SPECIFICATION	INSPECTION BY			
			REFERENCE				
SEISMIC RESISTANCE							
Nonstructural components	Nonstructural components, supports, or attachments	Per 1705.13.2	1705.13.2	3rd Party Special Inspector			
FIRE-RESISTANT PENETRATIONS AND JOINTS							
Penetration firestops	Verify appropriate system speci- fied and installed	Periodic	1705.17.1 / ASTM E2174	3rd Party Special Inspector			
Fire-resistant joint systems	Verify appropriate system speci- fied and installed	Periodic	1705.17.2 / ASTM E2293	3rd Party Special Inspector			

# 3.3 INSPECTIONS REQUIRED CHAPTER 1:

- A. IBC Chapter 1 Inspections
  - Chapter 1 Inspections for this project shall be provided by individuals approved by Office of State Engineers. The required Inspections for this project include but are not limited to:
    - 110.3.1 Footing and foundation inspection
      110.3.2 Concrete slab or under floor inspection
      110.3.3 Lowest floor elevation
      110.3.4 Frame inspection
      110.3.5 Lath, gypsum board and gypsum panel product inspection
    - 110.3.6 Fire- and smoke-resistant penetrations
    - 110.3.7 Energy efficiency inspections
    - 110.3.8 Other inspections
    - S406.6 Inspection of fill. Placement of the fill material shall be inspected by the code official.

RR109.1.1. Foundation inspection: Inspection of the foundation shall be made after poles or piers or trenches or basement areas are excavated and any required forms

erected and any required reinforcing steel is in place prior to the placing of concrete. The foundation inspection shall include excavations for thickened slabs intended for the support of bearing walls, partitions, structural supports, or equipment.

RR109.1.2 Plumbing, mechanical, gas and electrical systems inspection: Rough inspection of plumbing, appliances are set or installed, and prior to farming inspection.

Mechanical Code: M107.1 Required Inspections

- 1. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place.
- 2. Rough-in inspection shall be made after the roof, framing, fireblocking, and bracing are in place and all ducting and other components to be concealed are completed, and prior to the installation of wall or ceiling membranes.

Plumbing Code: P107.1 Required Inspection and testing.

- 1. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place.
- 2. Rough-in inspection shall be made after the roof, framing, fireblocking, and bracing are in place and all ducting and other components to be concealed are completed, and prior to the installation of wall or ceiling membranes.

## **Electrical Code:**

- 1. Underground inspection shall be made after trenches or ditches are excavated and bedded, piping installed, and before backfill is put in place.
- 2. Rough-in inspection shall be made after the roof, framing, fire-blocking, and bracing are in place and all ducting and other components to be concealed are completed and prior to the installation of concealing construction.

#### 3.4 TEST AND INSPECTION LOG AND FORMS

- A. Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Architect.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours
- C. Maintain all logs, inspection reports and related summary sheets as required by Office of State Engineers (OSE).

## 3.5 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.

CHAPTER 1 AND CHAPTER 17 SPECIAL INSPECTIONS

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

## 3.6 TESTING AND INSPECTON

A. Reference related specifications for the minimum level of inspections and testing. Provide additional inspections and testing as necessary to determine compliance with the construction drawings and to satisfy IBC requirements for Chapter1 Inspections and Chapter 17 Special Inspections.

**END OF SECTION** 

## PART 1 - GENERAL

## 1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

#### B. Related Section:

1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

### 1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

## 1.3 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in and ICC/ANSI A117.1.

### 1.4 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

#### PART 2 - PRODUCTS

# 2.1 MATERIALS (as required by GC for security)

- A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts.
- B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull

posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.

### 2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Existing house on site with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- D. Provide temporary toilet facilities on site for all construction related personnel. Position portable toilets in a location agreeable to Owner.

#### 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction and clean HVAC system as required in Division 01 Section "Closeout Procedures."

### PART 3 - EXECUTION

# 3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

## 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - 1. Connect temporary sewers to municipal system indicated as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
  - 1. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
  - 2. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Provide power service required from utility source.
  - 2. Provide power outlets for construction operations, with branch wiring and distribution boxes located at each floor. Provide flexible power cords as required.
  - Provide main service disconnect and over-current protection at convenient location and meter.
  - 4. Permanent convenience receptacles may be utilized during construction.
  - 5. Provide adequate distribution equipment, wiring and outlets to provide single phase branch circuits for power and lighting.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  - 2. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
  - 3. Maintain lighting and provide routine repairs.

- 4. Permanent building lighting may be utilized during construction.
- I. Electronic Communication Service: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications. Equip computer with not less than the following:
  - 1. Printer: "All-in-one" unit equipped with printer server, combining color printing, photocopying, scanning, and faxing, or separate units for each of these 3 functions.
  - 2. Internet Service: Broadband modem, router and ISP, equipped with hardware firewall, providing adequate memory for proper download speeds at each computer.
  - 3. Internet Security: Integrated software, providing software firewall, virus, spyware, phishing and spam protection in a combined application.

#### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. If required provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
  - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
  - 1. Where required, provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
  - 1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
  - 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
  - 3. Recondition base after temporary use, including removing contaminated material, regrading, proof-rolling, compacting, and testing.
  - 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.

- E. Parking: Provide temporary parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
  - 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
  - 1. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
    - a. Provide temporary, directional signs for construction personnel and visitors.
  - 2. Maintain and touchup signs so they are legible at all times.
- H. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- I. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.
- J. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- K. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- L. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

## 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."
- C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

- E. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Prohibit smoking in construction areas.
  - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

## 3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

TEMPORARY FACILITIES AND CONTROLS

- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 5000

## PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

## B. Related Section:

1. Division 01 Section "Substitution Procedures" for requests for substitutions.

## 1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

## 1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 working days of receipt of request, or seven working days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

PRODUCT REQUIREMENTS

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

## 1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

# 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

# B. Delivery and Handling:

- 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
- Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
- 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

# C. Storage:

- 1. Store products to allow for inspection and measurement of quantity or counting of units.
- 2. Store materials in a manner that will not endanger Project structure.
- 3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
- 4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
- 6. Protect stored products from damage and liquids from freezing.

### 1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

PRODUCT REQUIREMENTS

- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  - 3. Refer to Divisions 02 through 49. Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

# PART 2 - PRODUCTS

## 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  - 4. Where products are accompanied by the term "as selected," Architect will make selection.
  - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

### B. Product Selection Procedures:

- 1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
- 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
- 3. Products:
  - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered, unless pre-approved prior to the bid.
  - b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

### 4. Manufacturers:

PRODUCT REQUIREMENTS

- a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless pre-approved prior to the bid.
- b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
- 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require revisions to the Contract Documents, which it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - 3. Evidence that proposed product provides specified warranty.
  - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

## PART 1 - GENERAL

STATE PROJECT NO.: H34-9517

## 1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. Installation of the Work.
  - 4. Cutting and patching.
  - 5. Coordination of Owner-installed products.
  - 6. Progress cleaning.
  - 7. Starting and adjusting.
  - 8. Protection of installed construction.
  - 9. Correction of the Work.

### B. Related Sections:

- 1. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
- 2. Division 07 Section "Caulking & Sealants" for firestopping use in patching penetrations in fire-rated construction.

## 1.2 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
  - Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
  - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

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## 1.3 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

# PART 2 - PRODUCTS

## 2.1 MATERIALS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
  - Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed
  - 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

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## 3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

## 3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

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- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

## 3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

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- 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
- 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
- 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
- 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
- 6. Proceed with patching after construction operations requiring cutting are complete.
- G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
  - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an evenplane surface of uniform appearance.
  - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

## 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

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- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

## 3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

#### 3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

# 3.9 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

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- 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 7300

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#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Demolition and removal of selected portions of a building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Repair procedures for selective demolition operations.
- B. Related Sections include the following:
  - 1. Division 1 Section "Summary" for use of the premises and phasing requirements.
  - 2. Division 1 Section "Work Restrictions" for restrictions on use of the premises due to Owner or tenant occupancy.
  - 3. Division 1 Section "Construction Progress Documentation" for preconstruction photographs taken before selective demolition.
  - 4. Division 1 Section "Photographic Documentation" for preconstruction photographs taken before selective demolition.
  - 5. Division 1 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
  - 6. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.
  - 7. Division 2 Section "Building Demolition" for demolition of entire buildings, structures, and site improvements.
  - 8. Division 2 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.
  - 9. Division 23 Sections for demolishing, cutting, patching, or relocating mechanical items.
  - 10. Division 26 Sections for demolishing, cutting, patching, or relocating electrical items.

## 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

#### 1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.
- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
  - Coordinate with Owner's historical adviser, who will establish special procedures for removal and salvage.

# 1.5 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's school faculty and students on-site operations are uninterrupted.
  - 2. Interruption of utility services.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Locations of temporary partitions and means of egress.
  - 6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- D. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- E. Pre-demolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

# 1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

SELECTIVE DEMOLITION

- B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.

#### 1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
  - 1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
  - Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous Materials: Hazardous materials are present in building to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
  - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
  - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
  - 3. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site will not be permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

# 1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.
  - 1. If possible, retain original Installer or fabricator to patch the exposed Work listed below that is damaged during selective demolition. If it is impossible to engage

SELECTIVE DEMOLITION

original Installer or fabricator, engage another recognized experienced and specialized firm.

- a. Processed concrete finishes.
- b. Stonework and stone masonry.
- c. Matched-veneer woodwork.
- d. Preformed metal panels.
- e. Firestopping.
- f. Window wall system.
- g. Fluid-applied flooring.
- h. Aggregate wall coating.
- i. HVAC enclosures, cabinets, or covers.

#### PART 2 - PRODUCTS

# 2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
  - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  - Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

#### PART 3 - EXECUTION

# 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

## 3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
  - 1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
  - 2. Arrange to shut off indicated utilities with utility companies.
  - 3. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
  - 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
- D. Utility Requirements: Refer to Sections 22 through 26 for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

## 3.3 PREPARATION

- A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- B. Pest Control: Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.
- C. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
  - 2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
  - 3. Protect existing site improvements, appurtenances, and landscaping to remain.
  - 4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
- D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

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- 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
- 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
- 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
- 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- E. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
- F. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
- G. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - Strengthen or add new supports when required during progress of selective demolition.

# 3.4 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
  - 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
  - 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

## 3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
  - 5. Maintain adequate ventilation when using cutting torches.
  - 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  - 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 9. Dispose of demolished items and materials promptly.
  - 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- B. Existing Facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.
- C. Removed and Salvaged Items: Comply with the following:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items: Comply with the following:
  - 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.
  - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to

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- a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- F. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.
- G. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- H. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- I. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
- J. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
  - 1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- K. Roofing: Remove no more existing roofing than can be covered in one day by new roofing. Refer to applicable Division 7 Section for new roofing requirements.
- L. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

## 3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Division 1 Section "Cutting and Patching."
- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
  - Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
- E. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

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- 1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
- 2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
- 3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- F. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

# 3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 01 7320

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.

#### B. Related Sections:

- 1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- 2. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- 3. Divisions 02 through 33 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

#### 1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems.
  - 9. Submit test/adjust/balance records.
  - 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 11. Advise Owner of changeover in heat and other utilities.
  - 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  - 13. Complete final cleaning requirements, including touchup painting.
  - 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual

CLOSEOUT PROCEDURES

- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
  - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 2. Results of completed inspection will form the basis of requirements for final completion.

## 1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
  - 1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
  - Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  - 4. Submit pest-control final inspection report and warranty.
  - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

# 1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Submit list of incomplete items in the following format:
    - a. Three paper copies, unless otherwise indicated. Architect will return two copies.

## 1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

#### PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
  - 1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

# PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

- b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- d. Remove tools, construction equipment, machinery, and surplus material from Project site.
- e. Remove snow and ice to provide safe access to building.
- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- h. Sweep concrete floors broom clean in unoccupied spaces.
- i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- k. Remove labels that are not permanent.
- Touch up and otherwise repair and restore marred, exposed finishes and surfaces.
   Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  - Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.
- m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- n. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
- o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
- r. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

END OF SECTION 01 7700

## PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Operation manuals for systems, subsystems, and equipment.
  - 3. Product maintenance manuals.
  - 4. Systems and equipment maintenance manuals.

#### B. Related Sections:

1. Divisions 02 through 33 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

## 1.2 CLOSEOUT SUBMITTALS

- A. Format: Submit operations and maintenance manuals in the following format:
  - 1. PDF electronic file. Assemble each manual into a composite electronically-indexed file. Submit on digital media acceptable to Architect.
    - Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically-linked operation and maintenance directory.
    - b. Enable inserted reviewer comments on draft submittals.
  - 2. Three (3 or number requested by Owner up to maximum 3) paper copies AFTER the Electronic copy has been approved as complete and acceptable by architects and engineer. One (1) complete PDF electronic submittal of the hard copy for Owner ad One (1) complete PDF electronic submittal of the hard copy for Architect and Engineers. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.
- B. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion. Architect will return copy with comments.
  - 1. Correct or modify each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

# PART 2 - PRODUCTS

## 2.1 REQUIREMENTS FOR OPERATION AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

OPERATIONS AND MAINTENANCE DATA

- 1. Title page.
- 2. Table of contents.
- 3. Manual contents.
- B. Title Page: Include the following information:
  - Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Name and address of Owner.
  - Date of submittal.
  - 5. Name and contact information for Contractor.
  - 6. Name and contact information for Architect.
  - 7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
  - 8. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
  - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
  - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
  - 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

#### 2.2 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

- 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
- 2. Performance and design criteria if Contractor is delegated design responsibility.
- 3. Operating standards.
- 4. Operating procedures.
- Operating logs.
- 6. Wiring diagrams.
- 7. Control diagrams.
- 8. Piped system diagrams.
- 9. Precautions against improper use.
- 10. License requirements including inspection and renewal dates.

## B. Descriptions: Include the following:

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

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

- 1. Startup procedures.
- 2. Equipment or system break-in procedures.
- 3. Routine and normal operating instructions.
- 4. Regulation and control procedures.
- 5. Instructions on stopping.
- 6. Normal shutdown instructions.
- 7. Seasonal and weekend operating instructions.
- 8. Required sequences for electric or electronic systems.
- 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.3 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:

- 1. Product name and model number.
- 2. Manufacturer's name.
- 3. Color, pattern, and texture.
- Material and chemical composition. 4.
- Reordering information for specially manufactured products.
- Maintenance Procedures: Include manufacturer's written recommendations and the following: D.
  - 1. Inspection procedures.
  - 2. Types of cleaning agents to be used and methods of cleaning.
  - 3. List of cleaning agents and methods of cleaning detrimental to product.
  - 4. Schedule for routine cleaning and maintenance.
  - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and F. conditions that would affect validity of warranties or bonds.

#### SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS 2.4

- Content: For each system, subsystem, and piece of equipment not part of a system, include Α. source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - 1. Standard maintenance instructions and bulletins.
  - Drawings, diagrams, and instructions required for maintenance, including disassembly 2. and component removal, replacement, and assembly.
  - 3. Identification and nomenclature of parts and components.
  - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
  - 1. Test and inspection instructions.
  - Troubleshooting guide. 2.
  - 3. Precautions against improper maintenance.
  - Disassembly; component removal, repair, and replacement; and reassembly instructions. 4.
  - 5. Aligning, adjusting, and checking instructions.
  - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

OPERATIONS AND MAINTENANCE DATA

- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

## PART 3 - EXECUTION

## 3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- D. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
  - Do not use original project record documents as part of operation and maintenance manuals.
- E. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 7823

#### PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.

## B. Related Sections:

- 1. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- 2. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

## 1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal: Contractor shall submit one paper copy set of marked-up record prints. Architect will review and indicate whether general scope of changes and additional information recorded are acceptable.
    - b. Final Submittal: Contractor shall submit within 30 days after substantial completion, one durable reproducible record drawing set showing all significant changes to the Work made during construction. Drawings shall be stamped as "Project Record Drawings". Print each Drawing, whether or not changes and additional information were recorded. In addition, the contractor shall provide one electronic file copy of the record documents in PDF format.

#### PART 2 - PRODUCTS

# 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Record data as soon as possible after obtaining it.

PROJECT RECORD DOCUMENTS

- c. Record and check the markup before enclosing concealed installations.
- 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.
- 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
- 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize record prints and newly prepared and record Drawings into a durable reproducible manageable set. Bind the set with a durable paper cover sheet. Include identification on cover sheets.
  - 2. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  - 3. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

## PART 3 - EXECUTION

## 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and modifications to project record documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 01 7839

## PART 1 - GENERAL:

## 1.1 SECTION INCLUDES:

Pre-engineered stainless steel railing system. All drawings, general and supplementary conditions including division one specifications apply to this section.

#### 1.2 RELATED SECTIONS

Division 5: Ornamental Handrails and Railings

## 1.3 PRODUCT REFERENCES AND DESIGN REQUIREMENTS

- 1.3.1 Principle items specified in this section are:
  - a. Stainless steel handrails.
  - b. Stainless steel and steel guardrails.
  - c. Stainless steel horizontal infill rods.
- 1.3.2 Design requirements are based on IBC, ADA, and ICC/ANSI A117.1 standards:
  - a Guardrails and handrails shall meet or exceed all applicable building codes.
  - b. Railings shall have high strength stainless steel to comply with structural requirements with an appropriate safety margin.
  - c All internal members shall be stainless steel, aluminum or nylon to eliminate the possibility of rust.
  - d Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

#### 1.3.3 Work Included

Provide all materials, labor and equipment necessary to fabricate and completely install handrails, guardrails, infill panels, and other railing options as shows on drawings or specified herin.

#### 1.3.4 Definitions

Terms and definitions from ASTM E985 and ISO/TC 59 for railing related items apply to this section.

# 1.4 SYSTEM PERFORMANCE REQUIREMENTS

- 1.4.1 Railings shall meet or exceed the requirements of all applicable building codes.
- 1.4.2 Structural Performance: Provide handrails and railings capable of withstanding the following structural loads without exceeding allowable design working stress of materials for handrails, railings, anchors, and connections.
  - 1. Components and installation shall be in accordance with state and local code authorities.
  - 2. Components and installation shall follow current ADA and ICC/ANSI A117.1 guidelines.
  - 3. Top Rail: Shall withstand the following loads.
    - a. Concentrated load of 200 lbf (0.89 kN) applied at any point and in any direction.
    - b. Uniform load of 50 lbf-ft. (0.07 kN-m) applied horizontally and concurrently with uniform load of 100 lbf-ft. (0.14 kN-m) applied vertically downward.
    - c. Concentrated and uniform loads above need not be assumed to act concurrently.
  - 4. Handrails Not Serving as Top Rails: Shall withstanding the following loads.

- a. Concentrated load of 200 lbf (0.89 kN) applied at any point and in any direction.
- b. Uniform load of 50 lbf-ft. (0.07 kN-m) applied in any direction.
- c. Concentrated and uniform loads above need not be assumed to act concurrently.
- 5. Guard Infill Area: Shall withstand the following loads.
  - a. Concentrated horizontal load of 200 lbf (0.89 kN) applied to 1 square foot (0.09 m2) at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area. Loads need not be assumed to act concurrently with loads on top rails in determining stress on guard.
- 1.4.3 Railings shall have high strength stainless steel in order to comply with 1.4.2 with adequate safety margin.

## 1.5 SUBMITTALS

- 1.5.1 Shop Drawings for architectural approval, showing fabrication and installation of handrails and railings including plans, elevations, sections, details of components and attachments to other units of work.
- 1.5.2 Product data for stainless steel products to be supplied by the manufacturer.
- 1.5.3 Structural computations or test data/evaluations, material properties, PE (professional engineering) calculations signed/sealed in the State of the project, and other information needed to ensure satisfactory structural compliance to applicable building codes to be supplied by the manufacturer, based on final fabrication drawings and documents.
- 1.5.4 Maintenance instructions: Provide manufacturer's maintenance and cleaning instructions.
- 1.5.5 Warranty: Provide manufacturer's warranty effective from completion of work.
- 1.5.6 Initial selection
  - a. Provide 6" long handrail samples complete with supports and rosette covers to demonstrate stainless steel grade and finish. Nylon components to be included if specified, color as indicated.
- 1.5.7 Final verification
  - Qualification data for authorized installers specified in Quality Assurance is to demonstrate their capabilities and experience. Include list of completed projects with project and architect names.

#### 1.6 QUALITY ASSURANCE

- 1.6.1 Single Source Responsibility: Materials shall be supplied by a single, approved manufacturer.
- 1.6.2 Execution tolerance plus/minus 5/64" (2 mm).

#### 1.7 STORAGE

- 1.7.1 Store handrails and railing systems in clean, dry location, away from uncured concrete and masonry, protected against damage of any kind.
- 1.7.2 Materials must be kept in original packing until installation.
- 1.7.3 Materials to be stored at not lower than -40°C (-104°F) or higher than 100°C (212°F).

ORNAMENTAL HANDRAILS AND RAILINGS

## 1.8 PROJECT CONDITIONS

- 1.8.1 All measurements for handrails and railings should be taken from construction site elements to which railings are to fasten. This information to be recorded on final shop drawings.
- 1.8.2 Coordinate fabrication schedule with construction progress to avoid delay of work.

## 1.9 WARRANTY

- 1.9.1 Special Warranty: Provide manufacturer's standard form outlining the terms and conditions of their standard Limited Warranty:
  - a. Paint Finish on Extrusions and Components: 10 year limited warranty against cracking, flaking, blister, and peeling.

#### PART 2 - PRODUCTS:

## 2.1 MANUFACTURER

- 2.1.1. Mechanically fastened stainless steel railing systems: Basis of design shall be Circum™ Square post stainless steel railing system by HDI Railing Systems, an established U.S. manufacturer of a custom pre-engineered, mechanically fastened guardrail and handrail systems, in strict compliance with all technical requirements of the drawings and specifications. Miscellaneous metal fabricators/suppliers will not be acceptable. This standard is based on HDI Railing Systems, 3905 Continental Drive, Columbia PA 17512 (Tel. 717.285.4088, Fax. 717.285.5083).
- 2.1.2 Substitutions: Approved equal.

## 2.2 MATERIALS FOR GUARDRAILS AND HANDRAIL SYSTEM

- 2.2.1 All hand rails and other tubular components shall be constructed using the following:
  - 2.2.1.1 Stainless steel grade type AISI 304/304L or 316/316L; surface to be 240 grain/grit finish; tubes 1-1/2" (38mm) outside diameter by 5/64" (2 mm) wall thickness.
- 2.2.2 All posts and other components shall be constructed using the following:
  - 2.2.2.1 Stainless steel grade AISI type 304 or 316, surface to be 240 grain/grit finish; tubes 2" by 2" (51mm) diameter by 0.125" (3.2mm) wall thickness.
  - 2.2.2.2 Stainless steel grade AISI type 304 or 316, surface to be 240 grain/grit finish for: end caps at top of posts. Hardware for handrail attachment to match finish of posts.
  - 2.2.2.3 Stainless steel grade AISI type 304 or 316, surface to be 240 grain/grit (#6) finish for post fastening base plate.

- 2.2.3 Fastening bolts to be stainless steel or other high strength material as determined by engineering requirements.
- 2.2.4 Exterior and aggressive environments require stainless steel grade AISI 316 or 316L to minimize maintenance requirement; surface to be 240 grain/grit (#6) finish.

## 2.3 STAINLESS STEEL INFILL RAILS

2.3.1 Stainless steel infill rods, max. 9 ea.with guardrail height 42". Infill rails to be 3/8" (9.5 mm) diameter solid stainless steel, brushed finish #6 polished radially. Clamping knobs and fixtures to be stainless steel finished to match. Horizontal infill rails on approx. 4" (100 mm) centers, gaps between rods and adjacent posts to be equalized depending on required rail length and site conditions not to exceed 4" (100 mm).

## 2.4 FASTENERS

2.4.1 Anchors shall be fabricated from stainless steel or other materials as determined by engineering requirements with capability to sustain, without failure, load imposed within a safety factor of 4, as determined by testing per ASTM E488.

## 2.5 FABRICATION

- 2.5.1 Fabricate railing system for compliance with structural requirements of applicable code.
- 2.5.2 Pre-assemble railings prior to shipping to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and for coordination with shop drawings.
- 2.5.3 Stainless steel tubing cuts shall be square, without burrs and where exposed, rounded to produce smooth rigid and hairline joints.

# 2.6 POWDER COAT FINISH

2.6.1 All exposed components of the stainless steel guardrail/handrail system shall be powder coated by the manufacturer in manufacturer's standard color, as selected by the architect. Components to be powder coated include the guardrail posts, top rail, handrail, midrail infill rods, connectors, fasteners, and any other exposed components. Provide touchup paint for any areas damaged during construction.

# PART 3 - EXECUTION:

## 3.1 EXAMINATION

- 3.1.1 Do not begin installation until substrates have been properly prepared.
- 3.1.2 Verify that reinforcement and anchoring devices are the correct type, have been located correctly, and have been installed properly.
- 3.1.3 If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

ORNAMENTAL HANDRAILS AND RAILINGS

## 3.2 PREPARATION

3.2.1 Provide information on fastening point locations for posts where necessary to relevant parties.

#### 3.3 INSTALLATION

Installation shall be by HDI Railing Systems or a qualified, authorized representative of the manufacturer. HDI Railing Systems, 3905 Continental Drive, Columbia PA 17512 (Tel: 717-285-4088, Fax 717-285-5083).

- 3.3.1 Installation must be in accordance with standard or non-standard, yet applicable details (instructions) included on installation/shop drawings provided by HDI Railing Systems.
- 3.3.2 Install components plumb and in-line, accurately fitted, free from distortion or defects and securely anchored to structure.
- 3.3.3 Provide anchors, plates, angles, etc., necessary for connecting railings to structure.
- 3.3.4 Any and all field welding shall be by a certified welder.
- 3.3.5 Access for anchors that require through bolting either vertically or horizontally to be made available through General Contractor.
- 3.3.6 Erection tolerances:
  - 3.3.6.1 Maximum variation from plumb shall be 1/4" (6mm).
  - 3.3.6.2 Maximum offset from true alignment for every 50-foot of railing shall be 1/4" (6 mm), non-accumulative.

## 3.4 CLEANING AND PROTECTION

- 3.4.1 Remove manufacturer's protective coverings from exposed surfaces after installation.
- 3.4.2 Railings shall be cleaned, including infill panels, by contractor to the satisfaction of the owner.
- 3.4.3 Wipe with moistened cloth only. Do not use cleaning agents with abrasive or acid/alkaline content.
- 3.4.4 General contractor to provide protective covering on handrails and guardrails if construction is not yet finished in the area where the railings are installed.

# 3.5 CORRECTION OF DEFICIENCIES

3.5.1 All deficiencies in work and/or items not meeting specified requirements shall be corrected in order to meet specification requirements at no additional cost to owner.

**END OF SECTION** 

STATE PROJECT NO.: H34-9517 CAULKING & SEALANTS

#### 1.0 **GENERAL**

#### 1.01 RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Α. Conditions and Division - 1 Specification sections, apply to work of this section.

#### SCOPE OF WORK 1.02

- A. Work includes sealing (caulking) of joints where indicated on drawings, specified herein, and where required for a complete weather tight installation. Typical locations include, but are not necessarily limited to, the following:
  - 1. Exterior and interior perimeter of hollow metal door frames.
  - 2. Exterior and interior perimeter of Aluminum Entrances, Curtain Wall, and Storefront Work.
  - 3. Control and Expansion Joints.
  - 4. Metal Cap Flashings
  - 5. Where one partition or wall abuts another and is not structurally bonded.
- В. Fire Stopping Sealants and Smoke Seals are specified in Section 07 84 00.
- C. Sealants for glass and glazing are specified in Section 08 80 00.

#### 1.03 **DEFINITIONS:**

- A. Sealant: A weatherproof elastomer used in filling and sealing joints, having properties of adhesion, cohesion, extendibility under tension, compressibility and recovery; shall be designed to make joints air and water tight. Material is designed generally for application to joints at exterior of structures and for other joints subject to movement.
- В. Caulking compound: A material used in filling joints and seams, having properties of adhesion and cohesion; shall not be required to have extensibility and recovery properties, usually applied to joints at interior of structures.
- C. Caulk: The process of filling joints, without regard to type of material.
- D. Joint failure: A caulked joint exhibiting one or more of the following characteristics:
  - 1. Leaks air and/or water
  - 2. Sealant migrates
  - 3. Sealant loses adhesion
  - Sealant loses cohesion 4.
  - 5. Sealant does not cure
  - 6. Sealant discolors
  - 7. Sealant stains adjacent work
  - 8. Sealant develops bubbles, air pockets or voids.

#### SUBMITTALS: 1.04

A. Manufacturer's Data: Submit two copies of manufacturer's specifications. recommendations and installation instructions for sealant and associated miscellaneous material required. Include manufacturer's published data, or letter of certification, or certified test laboratory report indicating that material complies with requirements and is

CAULKING & SEALANTS

intended generally for applications shown. Show by transmittal that one copy of each recommendation and instruction has been distributed to Installer.

B. Approval of Applicator: A letter on manufacturer's letterhead signed by an active company administrator certifying that applicator is approved at the time of bidding by manufacturer.

# C. Color Samples:

- 1. Submit samples of manufacturer's standard and special colors as indicated at least 30 days prior to commencement of application.
- 2. Samples shall be actual materials or literature depicting actual material colors. Architect reserves the right to reject work not in conformance with selected colors, based upon samples submitted.
- Should Contractor select a manufacturer meeting specified requirements, except for minimum color range requirements, he shall be responsible for furnishing special colors within range requirements. Special colors shall be submitted for Architect's acceptance.
- D. Warranty: A warranty from the applicator upon completion guaranteeing the water tightness of the sealant installation for a period of five (5) years assuming responsibility for prompt and complete repair of any leaks occurring during this period. In addition, provide a letter on the manufacturer's letterhead at project close-out stating that work has been accomplished in accord with this specification and with manufacturer's application directive.

# 1.05 DELIVERY, STORAGE AND HANDLING

A. Comply with manufacturer's instruction regarding environmental conditions under which materials may be stored.

## 1.06 JOB CONDITIONS:

#### A. Weather Conditions

- 1. Install no materials under adverse weather conditions, or when temperatures are below or above those recommended by the manufacturer.
- 2. Proceed with work only when forecasted weather conditions are favorable for joint cure and development of high early bond strength.
- 3. Wherever joint width is affected by ambient temperature variations, install materials only when temperatures are in lower third of manufacturer's recommended installation temperature. Coordinate time schedule with Contractor to avoid delay of project.

## B. Protection of adjacent surfaces:

- 1. Protect by applying masking materials or manipulating application equipment to keep materials in joint. If masking materials are used, allow no tape to touch cleaned surfaces to receive sealant. Remove tape immediately after caulking, before surface skin begins to form.
- 2. Remove misapplied sealants from surfaces using solvents and methods recommended by manufacturer.
- 3. Restore surfaces from which sealants have been removed to original condition and appearance.

CAULKING & SEALANTS

#### 1.07 SERVICES OF MANUFACTURER'S REPRESENTATIVE

A. Manufacturer of sealant materials shall provide the services of a factory representative who shall conduct on site check of caulking work to determine compliance with manufacturer's application directive.

## 1.08 APPLICATORS

A. Subcontract the caulking and sealing work to a firm experienced in the application of the types of materials required, employing skilled tradesmen for the work and who are approved by the manufacturer of the materials.

#### 2.0 PRODUCTS

# 2.01 MATERIALS

A. Sealant for Exterior Work: Provide two-component Polyurethane-based elastomeric sealant complying with FS TT-S-00227E, Type II (Non-Sag), Class A, and ANSI A116.1.

These materials shall be of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.

DYNATROL II by Pecora Corporation
SONOLASTIC NP II by Sonneborn-Contech

DYMERIC II by Tremco

B. Caulking for Interior Work: Provide one-part acrylic latex polymer non-sag Caulking Compound complying with ASTM C834.

Products complying with requirements include, but not necessarily limited to:

AC-20 by Pecora Corporation

ACRYLIC LATEX by Tremco

SONOLAC by Sonneborn-Contech

C. Sealant for Interior Horizontal Joints subject to Foot Traffic: Provide two part, cold-applied, chemically-curing, horizontal grade, elastomeric polyurethane Joint Sealant, complying with ASTM D 1850 and FS TT-S-00227E (3), Class A, Type 1.

Products complying with requirements include, but not necessarily limited to:

UREXPAN NR-200 by Pecora Corporation

THC-900 by Tremco

SONOLASTIC by Sonneborn-Contech

#### 2.02 COLORS:

- A. As selected by Architect from manufacturer's standard selection.
- B. Colors of caulk are multicolor and shall match masonry, windows, metal roof and other separate finishes as selected by the architect.

CAULKING & SEALANTS

#### 2.03 COMPATIBILITY:

A. Before purchase of the specified sealant, investigate its compatibility with the joint surfaces, joint fillers and other materials behind or below the joint in the construction. Provide only materials (manufacturer's recommended variation of the specified materials) which are known to be fully compatible with the actual installation conditions, as shown by the manufacture's published data or certification.

#### 2.04 ACCESSORY MATERIALS:

- A. Joint Cleaner: Type recommended by sealant manufacturer for substrates indicated.
- B. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.
- C. Bond Breaker Tape (BB-Tp): Polyethylene tape or other plastic tape as recommended by sealant manufacturer to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self adhesive tape where applicable.
- D. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam as recommended by sealant mfg. for compatibility with sealant material. Provide size and shape of rod to control joint depth, break bond at bottom of joint, form optimum shape of bead on back size to minimize possibility of extrusion when joint is compressed.
- E. Tooling agent: Agent recommended by sealant manufacturer to insure contact of material with inner joint faces.
- F. Divider strips: Synthetic rubber or closed cell synthetic foam not less than 1/6" thick and full depth of sealant; approved by manufacturers of dissimilar materials as being compatible with each other.

#### 3.0 EXECUTION

# 3.01 JOB MOCKUP:

- A. Prepare, caulk and finish one sample of each joint condition.
- B. Sample joints shall be accepted by Architect prior to beginning work. Retain approved samples as a standard for work.
- C. Only neat tooled joints will be accepted.

#### 3.02 JOINT SURFACE PREPARATION

- A. Installer must examine joint surfaces, backing and anchorage of units forming sealant rabbet and conditions under which sealant work is to be performed and notify Contractor in writing of any conditions detrimental to proper and timely completion of work. Do not proceed with sealant work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- B. Clean joint surfaces immediately before caulking joints. Remove dirt, insecure coatings, moisture and other substances which could interfere with bond

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- C. Etch concrete and masonry joint surfaces to remove excess alkalinity, unless sealant manufacturer's product data indicates that alkalinity does not interfere with bond and performance. Etch with 5% solution of muriatic acid; neutralize with dilute ammonia solution; rinse with clean water and allow to dry before caulking.
- D. Roughen joint surfaces on vitreous coated and similar non-porous materials, unless sealant manufacturer's product data indicates equal bond strength as porous surfaces. Rub with fine abrasive cloth or wool to produce dull sheen.

#### 3.03 APPLICATION

- A. Comply with Sealant Manufacturer's printed instructions except where more stringent requirements are shown or specified and except where manufacturer's technical representative directs otherwise.
- B. Prime or Seal joint surfaces where recommended by sealant manufacturer. Do not allow primer/sealer to spill or migrate onto adjoining surfaces.
- C. Install Sealant Backer Rod for all caulking materials, except where recommended to be omitted by sealant mfg. for application indicated.
- D. Employ installation techniques which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joints to form a slight cove, so that joint will not trap moisture and dirt. Tool sealant as recommended by sealant manufacturer.
- E. Do not allow materials to overflow or spill onto adjoining surfaces. Use masking tape or other precautionary devices to prevent staining of adjoining surfaces.
- F. Remove excess and misplaced materials as work progresses. Clean adjoining surfaces to eliminate evidence of misplaced materials, without damage to adjacent surfaces or finishes.
- G. Cure Sealants in compliance with manufacturer's product data to obtain high early bond strength, internal cohesive strength and surface durability.
- H. Install sealants to depths as shown, or, if not shown, as recommended by the sealant manufacturer.
- I. Installer shall advise contractor of procedures required for protection of sealants and caulking compounds during construction period, so that they will be without deterioration or damage (other than normal weathering) at time of Owner's acceptance.

END OF SECTION 07 90 00

HOLLOW METAL WORK

- 1.0 GENERAL:
- 1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including Divisions 0 (Bidding and Contract Documents), and 1 (General Requirements) apply to work specified in this section.
- 1.2 SCOPE: This section covers interior hollow metal work, complete. The extent of hollow metal work is shown on drawings and in schedules.
- 1.3 QUALITY ASSURANCE: Provide custom hollow metal work manufactured by a single firm specializing in the production of this type of work. Manufacturers offering products to comply with requirements of this specification include the following:

Amweld Curries Republic

Ceco

- 1.4 APPLICABLE STANDARDS: Hollow metal doors and frames shall be as manufactured by a member of the Steel Door Institute in accordance with the Institute's "Recommended Standard Steel Doors and Frame Details" (S.D.I. 111).
- 1.5 FIRE-RATED ASSEMBLIES: Wherever a fire-resistance classification is shown or scheduled for hollow metal work, provide fire-rated hollow metal doors and frames investigated and tested as a fire door assembly, complete with type of fire door hardware to be used. Identify each fire door and frame with UL labels, indicating applicable fire rating of both door and frame.
  - A. Standard: Construction of assemblies to comply with NFPA Standard No. 80 and as herein specified.
  - B. Temperature Rise Rating: At stairwell enclosures, provide doors which have a Temperature Rise Rating of not more than 450 degrees F. maximum on the unexposed side to 30 minutes of standard fire test exposure.
- 1.6 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided the finish items are equal in all respects to new work and are acceptable to the Architect; otherwise, remove and replace damaged items as directed. Store hollow metal units on raised platforms in vertical positions with blocking between units to allow air circulation. Keep stored material covered and protected from damage.
- 1.7 JOB CONDITIONS: The Installer must examine the substrate and conditions under which hollow metal work is to be installed and notify the Contractor in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

### 1.8 SUBMITTALS:

- A. Manufacturer's Data: For information only, submit two copies of manufacturer's specifications for fabrication and shop painting and installation instructions.
- B. Shop Drawings: Submit shop drawings for the fabrication and erection of custom hollow metal doors and frames. Include details of each frame type, thickness of metal, elevations of door design types, conditions at openings, details of construction, location

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and installation requirements of finish hardware and reinforcements and details of joints, fastenings, anchors and connections.

# 2.0 PRODUCTS:

# 2.1 BASIC MATERIALS:

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A569 and ASTM A568.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, Type E, matte finish, complying with ASTM A366 and ASTM A568. Provide stretcher-leveled standard of flatness for facing sheets of doors.
- C. Metallic Coated Steel Sheets: Commercial Steel (CS), Type B; with minimum **A60** (**ZF180**) metallic coating, complying with ASTM A653/A 653M,
- D. Supports and Anchors: Provide units fabricated of not less than 16 gauge sheet steel. Galvanize after fabrication where units will be built into exterior walls, complying with ASTM A153, Class B.
- E. Inserts, Bolts and Fasteners: Provide manufacturer's standard units, except hot-dip galvanize all items to be built into exterior walls, complying with ASTM A153.
- F. Shop-Applied Paint: Provide a rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints, complying with FS TT-P-57 (Type II), TT-P-636, or TT-P-664. Paint galvanized surfaces with a zinc dust-zinc oxide primer complying with FS TT-P-641, Type II.
- 2.2 FABRICATION, GENERAL: Fabricate hollow metal units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at the project site. Weld exposed joints continuously, grind, dress and make smooth, flush and invisible. Metallic filler to conceal manufacturing defects is not acceptable.
  - A. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.
  - B. Clearance: Single swing doors shall have not more than a 1/8" clearance at jambs and heads, 1/8" clearance at meeting edges of pairs of doors, and 3/8" clearance at bottom. All dimensions are nominal and subject to recognized manufacturer's tolerance. The lock edges of doors shall be so designed as to provide proper operating clearance. Special bottom clearance shall be provided where thresholds require it.
    - 1. Fire rated doors shall have clearances as specified in NFPA Standard No. 80.
  - C. Finish Hardware Preparation: Prepare hollow metal units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 "Specifications for Door and Frame Preparation".
    - 1. Reinforce hollow metal Units to receive surface applied hardware. Drilling and tapping for surface applied finish hardware may be done at project site.

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- 2. Locate finish hardware as shown on final shop drawings, or if not shown, in accordance with "Recommended Location for Building Hardware", published by the National Builders' Hardware Association.
- 3. Fire-rated openings shall have been prepared for hardware in a manner that will not compromise the required fire rating.

# D. Shop Painting:

- 1. Clean, treat and paint all surfaces of fabricated hollow metal units, including galvanized surfaces, whether concealed or exposed in the finished work.
- 2. Clean steel surfaces of all mill scale, rust, oil, grease, dirt and other foreign materials before the application of the shop coat of paint. Remove mill scale and rust by hand tool methods complying with SSPC-SP 2 and solvent clean all metal complying with SSPC-SP 1.
- 3. Apply pretreatment to cleaned metal surfaces, using cold phosphate solution (SSPC-PT 2), hot phosphate solution (SSPC-PT 4) or basic zinc chromate-vinyl butyral solution (SSPC-PT 3).
- 4. Apply shop coat of prime paint within the time limits recommended by the pretreatment manufacturer. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 2.0 mils.
- 2.3 FRAMES: Provide hollow metal frames for doors, transoms, side-lights, view window, borrowed lights and other openings, in sizes and profiles as indicated.
  - A. General: Pressed steel frames for doors, where indicated, shall be combination buck, frame and trim type. Frames shall be welded type with mitered head and jamb members. Corners shall be reinforced and have continuous welds. Exposed welds shall be filled and ground smooth to a level surface without dishing.Note: Knock-down frames are acceptable for metal stud partitions in lieu of fully welded.
  - B. Frame Sheet Steel Thickness: The thickness of sheet metal used in constructing or fabricating frames shall be 14 gauge for single interior rated and non-rated frames and 12 gauge for all pairs of doors interior. Fabricate frames concealed stiffeners, reinforcement, edge channels louvers and moldings from either cold-rolled or hot-rolled steel at fabricator's option.
  - C. Mullions and Transom Bars: Provide closed or tubular mullions and transom bars where indicated. Fasten mullions and transom bars at crossing and to jambs by butt welding. Reinforce joints between frame members with concealed clip angles or sleeves same metal and thickness as frame. Where installed in masonry, leave vertical mullions in frames open at the top so they can be filled with grout.
    - For fire-rated openings, do not provide a mullion or astragal at the meeting edges of a pair of doors for openings rated up to 90 minutes. See Section 08 21 00 -"Wood Doors" for edge treatment of pairs of wood doors.
  - D. Wall Anchors: Furnish wall anchors as required to secure frames to adjacent construction, formed of not less than 18 gauge galvanized steel.
    - 1. Masonry Construction: Adjustable, flat or corrugated or perforated, T-shaped to suit frame size with leg not less than 2" wide by 10" long. Furnish at least three anchors per jamb.

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- 2. Metal Stud Partitions: Insert type with notched clip to engage metal stud, welded to back of frame. Provide at least three anchors for each jamb for frames.
- E. Floor Anchors: Provide floor anchors for each jamb and mullion which extends to floor, formed of not less than 16 gauge galvanized steel sheet, as follows:
  - 1. Monolithic Concrete Slabs: Clip type anchors, with two holes to receive fasteners, welded to bottom of jambs and mullions.
- F. Structural Reinforcing Members: Provide structural reinforcing members as part of frame assembly, where indicated at mullions, transoms, or other locations which are to be built into frame.
- G. Head Reinforcing: For frames over 4'-0" wide, provide two continuous steel angles not less than 2" x 2" x 12 gauge and width of opening, welded to back of frame at head, unless otherwise shown. Head reinforcing at all door frames shall be continuous for the length of the head.
- H. Hinge Reinforcing: 7 gauge for hinges on frames.
- I. Spreader Bars: Provide two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- J. Rubber Door Silencers: Drill stops to receive three silencers on single-door frames and four silencers on double-door frames. Install plastic plugs to keep holes clear during construction.
- K. Plaster Guards: Provide 26 gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

# 2.4 DOORS:

- A. Interior Doors: SDI-100, Grade II, heavy-duty, Model 2, minimum 18 gauge faces.
- B. Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, only cold-rolled steel.
- C. "A" Label fire doors shall have minimum 16 gauge face plates.
  - 1.Door faces shall receive paint except as listed below.
- D. Door reinforcement shall be a minimum of 12 gauge for hinges and be contiuous channel for the full height of the door, 12 gauge for closers and be a contiuous channel for the full length of the header and 14 gauge for strikes and be a continuous channel for the full height of the door. . Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, only cold-rolled steel.
- E. Door Louvers: Provide sightproof stationary louvers for interior doors where indicated, constructed of inverted V-shaped or Y-shaped blades formed of 24 gauge cold-rolled steel set into 20-gauge steel frame.
- 2.6 STOPS AND MOLDINGS: Provide stops and moldings around glazed panels in doors and frames where indicated.

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- A. Form fixed stops and moldings integral with frame, unless otherwise acceptable to Architect. Provide fixed stops on inside of hollow metal units exposed to exterior and on corridor side of interior units, unless otherwise indicated.
- B. Provide removable stops and molds at other locations, formed of not less than 20 gauge steel sheets; exterior, galvanized and interior cold-rolled. Secure with machine screws spaced uniformly not more than 12" o.c. Form corners with butted hair-line joints. Coordinate width of rabbet between fixed and removable stops with type of glass or panel and type of installation indicated.

# 3.0 EXECUTION:

- 3.1 GENERAL: Install hollow metal units and accessories in accordance with the final shop drawings and manufacturer's data and as herein specified.
- 3.2 SETTING MASONRY ANCHORAGE DEVICES: Provide masonry anchorage devices where required for securing hollow metal frames to in-place concrete or masonry construction. Set anchorage devices opposite each anchor location, in accordance with details on final shop drawings and anchorage device manufacturer's instructions. Leave drilled holes rough, not reamed, and free from dust and debris.
- 3.3 PLACING FRAMES: Set frames accurately in position, plumbed, aligned and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders leaving surfaces smooth and undamaged. Comply with provisions of SDI-105 "Recommended Erection Instructions for Steel Frames" unless otherwise indicated.
  - A. In masonry construction, building-in of anchors and grouting of frames shall be performed as wall is laid up. Mortar may be used to grout frames only.
  - B. Place fire-rated frames in accordance with NFPA Standard No. 80.
- 3.4 DOOR INSTALLATION: Fit hollow metal doors, except fire-rated doors, accurately in their respective frames, with clearances specified in SDI-100. Place fire-rated doors with clearances as specified NFPA Standard No. 80. Doors shall be installed plumb and in true alignment in a prepared opening and be fastened to achieve the maximum operational effectiveness and appearance of the unit.
- 3.5 HARDWARE: Hardware shall be field applied.

# 3.6 ADJUST AND CLEAN:

- A. Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B. Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.
- 3.7 FINAL ADJUSTMENTS: Check and readjust all operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise damaged.

END OF SECTION 08 11 00

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# 1.0 GENERAL

#### 1.1 WORK INCLUDED IN THIS SECTION

- A. The General Conditions, Supplementary Conditions and General Requirements apply to all work in this section.
- B. The work includes, but is not limited to, furnishing flush wood doors.

# 1.2 RELATED WORK IN OTHER SECTIONS

- A. Rough Carpentry, Section 06 10 00.
- B. Hollow Metal Work, Section 08 11 00.
- C. Glazing, Section 08 80 00.

#### 1.3 SUBMITTALS

- A. Comply with requirements of Section 01 33 00.
- B. Submit complete schedule indicating dimensions, cutouts, hardware sets, species, and other pertinent data which references the individual architectural door mark number as shown on the plan sheets.
- Submit Manufacturer's data sheets, completely describing door construction, WDMA I.S.
   1A 13(formerly NWWDA) and AWI Classifications.
- D. Door Supplier to submit written certification on the supplier's letterhead that the doors provided shall conform to every aspect of this specification.
- E. Door finish samples shall accompany submittals. The samples will show the range of color variation.
- F. Warranty statement shall accompany the submittal.

#### 1.4 QUALITY ASSURANCE

- A. Flush wood veneer doors shall conform to the latest edition of the following standards: WDMA I.S. 1A requirements for "Premium Grade".
- B. Tolerances for warp, telegraphing, squareness, and prefitting dimensions as per the latest editions of WDMA I.S. 1A and AWI Section 1300.
- C. Each door shall bear an identifying label indicating the manufacturer, door number and order number, as well as fire rating where applicable.
- D. Where fire rated doors are required, provide doors labeled by ITS/Warnock Hersey International. Construction details and hardware application shall be as approved by the labeling agency.
- E. Manufacturer shall be notified when doors are to meet UBC 7-2-1997 requirements for positive pressure opening assemblies in areas where this has been adopted by local authorities having jurisdiction.

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WOOD DOORS

F. Flush wood doors must not contain any urea formaldehyde or use formaldehyde-based glue in the manufacturing process.

# 1.5 DELIVERY, STORAGE AND HANDLING

- A. Doors shall be individually poly bagged.
- B. Deliver the doors to the jobsite in Manufacturer's original unopened poly bags.
- C. Deliver doors after the building is enclosed, dry, heated and adequately ventilated. Do not receive or store doors in damp areas. Do not drag the doors on the ground, floor or across one another.
- D. Store doors flat on a level surface, follow Manufacturer's printed instructions for storage and handling.

# 1.6 ENVIRONMENTAL CONDITIONS

A. Do not subject doors to extreme conditions or changes in heat, dryness or humidity in accordance with the latest edition of WDMA I.S. 1A.

# 1.7 GUARANTEE

A. Provide two (2) copies of the Manufacturer's written guarantee against warpage, delamination and defects in materials and workmanship for the following time period:

Interior doors: Life of installation for solid core doors, interior use.

B. Any defects noted during the warranty period shall be corrected at no cost to the building owner. Such corrective work shall include all labor and material for repair, replacement, refinishing and rehanging as required.

# 2.0 PRODUCTS

#### 2.1 GENERAL

- A. All wood doors are to meet criteria for the latest edition of WDMA I.S. 1A "Premium Grade" approved manufacturers are as follows:
  - 1. V.T. Inc. (products described herein)
  - 2. Algoma
  - Eggers
  - Marshfield
- A. Glass moldings in nonrated flush doors shall be similar to VT Industries' style VT7. Fire rated doors shall have VT steel vision frame style #115, black prime finish.
- B. Doors shall be prefit and beveled at the factory to fit the openings. Prefit tolerances shall be in accordance with the requirements of WDMA I.S. 1A and AWI Section 1300, latest editions.

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WOOD DOORS

- C. Doors shall be machined in the factory for mortised hardware items, including pilot holes for hinge screws and lock fronts.
- D. Top and bottom rails shall be factory sealed with an approved wood sealer.
- E. Glass and glazing to be performed under Section 08 80 00
- F. Louvers provided and installed under Division 23.
- G. Doors shall be factory finished.

#### 2.2 5-PLY FLUSH BONDED PARTICLE CORE DOORS, INTERIOR

- Α. WDMA I.S. 1A Quality Grade: Premium, Type PC-5ME. Seven-ply and non-bonded core constructions are not acceptable substitutions.
- В. Inner stiles to be 1 3/8" wide (before prefitting), structural composite lumber (SCL) with the outer stile to be the same species as the face veneer. The outer stile shall be applied after beveling and prior to face application. The door manufacturer shall drill 5/32" diameter pilot holes for all hinges.
- C. Rails are to be structural composite lumber (SCL), minimum 1 3/8" wide before prefitting.
- D. The core shall be particleboard, 28-32 pounds per cubic foot average density. Comply with particleboard standard ANSI A208.1, Grade 1-LD-2.
- E. Stiles and rails are to be securely GLUED to the core, and the entire assembly sanded flat as a unit to ensure minimal telegraphing of core components through face veneers.
- F. Composite crossbands shall be applied to core prior to application of matching hardwood stiles. Exposed crossbanding is not allowed along stile edges.
- G. Veneers are to be applied to the crossbanded core in a HOT PRESS using Type I exterior water-resistant adhesive. Five-ply construction.
- Η. Face veneers are to match existing building door species and cut. Minimum thickness 1/42 of an inch before sanding.

#### 2.3 **FACTORY FINISHING**

- AWI System TR-6, catalyzed polyurethane, premium grade. A.
- В. Stain color to be selected from the manufacturer's standard offering. Custom colors are available; a minimum 3"x5" physical sample is required for matching.
- C. AWI System TR-6 is catalyzed polyurethane. There shall be a stain coat (omitted if clear finish is desired), three coats of sealer, followed by sanding with a 320 grit paper, followed by two topcoats. The polyurethane shall be cured to produce a finish per AWI Section 1500, System TR-6. AWI finish Types 2 and 3 are not acceptable.
- D. Top and bottom rails shall be factory sealed with an approved wood sealer.

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#### 3.0 EXECUTION

# 3.1 PREPARATION

- A. Carefully inspect the locations where the doors are to be installed. Notify the owner's representative of any conditions, which would adversely affect the installation, or the subsequent operation of the door. Do not proceed until unsatisfactory conditions are corrected.
- B. Fitting of fire rated doors shall have clearances in compliance with NFPA No. 80.
- Allow doors to become acclimated to building temperature and humidity before installation.
- D. Within four days of fitting each door, seal exposed surfaces with at least two coats of polyurethane.
- E. Use only skilled mechanics to install and adjust the finish hardware from Section 08700.
- F. After the doors have been adjusted and cleaned, place the poly bags over the doors to provide protection while the remainder of construction proceeds.

END OF SECTION 08 21 00

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FINISH HARDWARE

# 1.0 GENERAL

#### 1.1 SCOPE:

- A. See Section 01 21 00 Allowances for materials, installation and SC Sales Tax associated with this section.
- B. Furnish complete finish hardware except as mentioned hereinafter as being provided by others.

# 1.2 DETAILS

- Coordinate hardware for related trades such as metal doors, frames, millwork, etc.
- B. Immediately after receipt of the finish hardware purchase order, coordinate approved shop drawings from any affected trades.
- C. Hardware shall be delivered to the job site in the manufacturer's original packages. Each item shall be clearly marked with the opening number to identify proper locations.
- D. Contractor to provide a suitable storage space for hardware upon delivery to the job site. Store and handle to prevent damage or loss.

# 1.3 QUALIFICATIONS:

- A. As a mandatory requirement, all hardware shall be furnished by an established hardware firm who maintains and operates an office, display and stock. The firm shall be a regular authorized distributor of the locks, and related hardware that it proposes to furnish.
- B. All hardware for this project shall be scheduled and furnished by or under the direct supervision of a regular member of the American Society of Architectural Hardware Consultants who is also a full time of the firm. Factory representatives or other persons working with but not for, as a regular employee of the Hardware Supplier will not be considered all schedules submitted to the architect for approved and job use shall carry the signature of the consultant. The Hardware Consultant shall make periodical visits to the jobsite while Hardware is being installed & on completion of project he shall inspect the hardware for correct operation and installation of same and notify the architect in writing that this inspection has been made.

# 1.4 SUBMITTALS:

- A. Prepare and submit the complete detailed hardware schedule in accordance with Section "Shop Drawings, Project Data & Samples".
- B. Schedule and detail each floor separately. On doors of different sizes or where hardware such as hinges, closers and locks is different a separate heading shall be used. No "A" label openings shall be combined with other label classifications.
- C. If requested, supply a sample of each hardware item as required, to be retained by architect for comparison with hardware furnished. Any deviation from hardware scheduled shall be replaced with the proper hardware. Samples will be returned in time for installation on the project. Tag for opening identification.
- D. Templates or template information shall be sent to each manufacturer who requires such information. (Example: Custom hollow metal door and frame

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manufacturers, etc.) An approved hardware schedule shall be sent to each manufacturer who required template information.

# 1.5 PRODUCT HANDLING:

- A. Hardware shall be ordered so that it will be available on time for job requirements.
- Locked storage space complete with shelving, for unpacking crates and sorting out hardware shall be furnished.
- C. If doors are field painted or finished, hardware shall be protected.

### 2.0 PRODUCTS:

#### 2.1 MATERIALS:

- A. Items listed herein are taken from the following manufacturer's catalogs:
- B. Items listed as allowable substitutions are approved. Any substitutions of hardware manufacturer's other than those listed in this <u>specification must be</u> approved in writing by the architect ten (10) days prior to bid date. Samples must be submitted upon request of the Architect.
- C. Finishes of items of hardware shall be as selected by the Owner.
- D. Hinges shall be Hager Stanley or McKinney
- E. Locks and Latches shall be mortise by Sargent Manufacturing 8200 Series
- F. Exit Devices shall be Von Duprin 99 series.
- G. Door Closers shall be Sargent 351 series
- H. Mop, Kick and Armor Plates shall be by Rockwood, Hager or Ives..
- I. Door Pulls shall be by Rockwood, Hager or Ives..
- J. Door stops shall be by Rockwood, Hager or Ives.
- K. Silencers shall be GJ64. Provide 3 silencers for single doors and two (2) silencers for pairs of doors.
- L. Thresholds shall be Pemko, Hager or National Guard Products.
- M. Fasteners. All items of hardware shall be supplied with correct fasteners such as wood

#### N. Kevs. Kevina

- All locksets shall be furnished with two (2) cut keys with key code number stamped on bow of key. All cylinders shall be master keyed to existing keyed master systems. Furnish four (4) master keys for each master keyed group. This system is Sargent RB keyway per owner. Winning bidder to verify.
- 2. Consult with the Architect & Owner & secure written approval of the complete keying layout prior to placing lock order with factory.

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FINISH HARDWARE

- 3. The master keys shall be sent direct to the Owner's Representative by registered mail, return receipt requested.
- O. Codes: The hardware supplier shall be responsible for supplying the correct hardware to meet all local and state building fire and handicapped codes.

#### 3.0 EXECUTION:

#### 3.1 HARDWARE LOCATION:

- A. A schedule of mounting heights for all items of hardware shall be included in hardware schedule for approval.
- B. Degree of opening for doors with overhead holder, closers, etc., shall be included in hardware schedule for Architect's approval.

#### 3.2 INSTALLATION:

- A. All hardware shall be installed by Manufacturers Certified Installers skilled in the application of institutional grade hardware.
- B. After installation, representative templates, instruction sheets, and installation detail, shall be placed in a file folder to be turned over to Owner when building is accepted. Include at least two (2) each of special adjusting tools furnished with hardware.
- C. After the building is occupied, arrange an appointment with the Owner's designated representative to instruct this person in the proper use, servicing, adjusting & maintenance of hardware.
- D. Special Emphasis will be placed on the care of and the installation on the Finished Hardware:
  - 1. Install hinges on doors for which they are scheduled and marked.
  - 2. Install locks on doors for which they are scheduled and marked.
  - 3. Do not remove labels on locks or cylinders this label has valuable keying
  - 4. If door stop scheduled for an opening is not appropriate due to furniture
  - 5. Closers are to be provided with Sex Nuts and Bolts.
  - 6. All lock strikes are to be 4 7/8" unless so noted.

# **END OF SECTION**

FINISH HARDWARE 08 7100 - Page 3 of 3

# PART 1 - GENERAL

# 1.1 SUMMARY

- A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
  - 1. Windows.
  - 2. Doors.
  - 3. Interior borrowed lites.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design glass, including comprehensive engineering analysis according to ICC's 2015 International Building Code by a qualified professional engineer, using the following design criteria:
  - 1. Design Wind Pressures: As indicated on Drawings.
  - Vertical Glazing: For glass surfaces sloped 15 degrees or less from vertical, design glass to resist design wind pressure based on glass type factors for shortduration load.

# 1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Adhesion and Compatibility Testing: Test each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.
  - 1. Testing will not be required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

# 1.4 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches (300 mm) square.
- C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.
- D. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- E. Preconstruction adhesion and compatibility test report.

# 1.5 QUALITY ASSURANCE

A. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction and the manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

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# 1.6 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from date of Substantial Completion.

# PART 2 - PRODUCTS

# 2.1 GLASS PRODUCTS, GENERAL

- A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.
- B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.

# 2.2 GLASS PRODUCTS

- A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.
- B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

# 2.3 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:
  - 1. Neoprene complying with ASTM C 864.
  - 2. EPDM complying with ASTM C 864.
  - 3. Silicone complying with ASTM C 1115.
  - 4. Thermoplastic polyolefin rubber complying with ASTM C 1115.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, or silicone gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.
  - 1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.

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# 2.4 GLAZING SEALANTS

#### A. General:

- Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
- 3. VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when calculated according to 40 CFR 59, Subpart D.
- 4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT as required to meet project conditions.
- C. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT as required to meet project conditions.
- D. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT as required to meet project conditions.
- E. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.

### 2.5 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
  - 1. AAMA 804.3 tape, where indicated.
  - 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
  - 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
  - 1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
  - 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

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# 2.6 MISCELLANEOUS GLAZING MATERIALS

- A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- F. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

#### 2.7 MONOLITHIC-GLASS TYPES

- A. Glass Type: (For Interior Doors and Windows only)
  - 1. Thickness: ¼" (6mm)
  - 2. Clear, Fully Tempered Float Glass
  - 3. Provide safety glazing labeling

# PART 3 - EXECUTION

# 3.1 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

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**GLAZING** 

- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

# 3.2 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Apply heel bead of elastomeric sealant.
- F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- G. Apply cap bead of elastomeric sealant over exposed edge of tape.

# 3.3 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

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# 3.4 SEALANT GLAZING (WET)

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- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

#### 3.5 CLEANING AND PROTECTION

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

**END OF SECTION** 

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# PART 1 GENERAL

#### 1.01 SECTION INCLUDES:

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Acoustic insulation.
- E. Gypsum wallboard.
- F. Joint treatment and accessories.

#### 1.02 RELATED REQUIREMENTS:

- A. Section 07 90 00 Joint Sealers:
- B. Section 09 51 00 Acoustical Ceilings: Gypsum board soffits at acoustical ceilings.

#### 1.03 REFERENCE STANDARDS:

- A. ASTM C 475/C 475M Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- B. ASTM C 645 Standard Specification for Nonstructural Steel Framing Members; 2009a.
- C. ASTM C 754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- D. ASTM C 840 Standard Specification for Application and Finishing of Gypsum Board; 2008.
- E. ASTM C 954 Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2007.
- F. ASTM C 1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007
- G. ASTM C 1047 Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2009.
- H. ASTM C 1396/C 1396M Standard Specification for Gypsum Board; 2009a.
- I. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2000 (Reapproved 2005).
- J. ASTM E 72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2005.
- K. ASTM E 90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- L. ASTM E 413 Classification for Rating Sound Insulation; 2004.
- M. GA-216 Application and Finishing of Gypsum Board; Gypsum Association; 2007.
- N. UL (FRD) Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

#### 1.04 SUBMITTALS:

**GYPSUM BOARD ASSEMBLIES** 

- A. See Section 01-3300 Submittal Procedures, for submittal procedures.
- Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Test Reports: For all stud framing products that do not comply with ASTM C 645 or C 754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

#### 1.05 ENVIRONMENTAL REQUIREMENTS:

A. Do not install joint treatment compounds unless installation areas comply with the temperature and ventilation requirements recommended by the drywall manufacturer.

# 1.06 QUALITY ASSURANCE:

A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum 5 years of documented experience.

#### 1.07 DELIVERY AND STORAGE OF MATERIALS:

- A. Coordinate delivery with construction schedule to minimize storage periods at the project site. Deliver in manufacturer's unopened bundles or packages, fully identified with manufacturer's name, brand, type and grade. Protect from weather, soiling and damage using handling equipment and storage techniques recommended by manufacturer.
- B. ALL GYPSUM WALLBOARD AND INSULATION SHALL BE KEPT DRY. ANY WALLBOARD OR INSULATION THAT GETS WET IN STORAGE OR AFTER INSTALLATION SHALL BE REMOVED AND REPLACED. ALL PRODUCTS SHOWING EVIDENCE OF MOLD GROWTH SHALL BE DISCARDED.

### PART 2 PRODUCTS

# 2.01 PERFORMANCE REQUIREMENTS:

A. Low-Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

#### 2.02 GYPSUM BOARD ASSEMBLIES:

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 20 percent.
- B. Provide completed assemblies complying with ASTM C 840 and GA-216.
- C. Interior Partitions at all interior metal stud walls: Provide completed assemblies with the following characteristics:
  - Acoustic Attenuation: STC of 45-49 or higher when indicated, calculated in accordance with ASTM E 413, based on tests conducted in accordance with ASTM E 90.
- D. Fire Rated Assemblies: Provide completed assemblies in compliance with tested assembly.
  - 1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL Fire Resistance Directory.

# 2.03 METAL FRAMING MATERIALS:

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

- B. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
  - Exception: The minimum metal thickness and section properties requirements of ASTM C 645 are waived provided steel of 40 ksi minimum yield strength is used, the metal is continuously dimpled, the effective thickness is at least twice the base metal thickness, and maximum stud heights are determined by testing in accordance with ASTM E 72 using assemblies specified by ASTM C 754.
  - 2. Studs: "C" shaped with flat or formed webs, 20 gauge.
  - 3. Runners: U shaped, sized to match studs.
  - 4. Ceiling Channels: C shaped, 16 gauge.
  - 5. Resilient Furring Channels: 1/2-inch- (13-mm-) deep members designed to reduce sound transmission. Shape to achieve STC assembly indicated.
- C. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
- D. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short.
- E. Gypsum Drywall Suspension System: USG Suspension System for flat gypsum panel ceilings. Pre-engineered, ASTM C645, G40 (G90 severe environmental conditions) hot-dipped galvanized system meeting all seismic and sound requirements of this project. Installation must be in compliance with IBC and ICC-ESR-1222

# 2.04 BOARD MATERIALS:

- A. Manufacturers Gypsum-Based Board:
  - 1. American Gypsum: www.americangypsum.com.
  - 2. CertainTeed Corporation: www.certainteed.com.
  - 3. Georgia-Pacific Gypsum LLC: www.gp.com/gypsum.
  - 4. National Gypsum Company: www.nationalgypsum.com.
  - 5. Temple-Inland Inc: www.templeinland.com.
  - 6. USG Corporation: www.usg.com.
  - 7. Substitutions: See Section 01-6000 Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D 3273.
    - a. Mold-resistant board is required at all locations.
  - 3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  - 4. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Ceilings: 5/8 inch.
- C. Abuse-Resistant Wallboard: Shall be 5/8" Fiber Rock brand VH1 panels by USG. Comply with ASTM E-119, ASTM E-84 and ASTM D4977.
  - For all exposed drywall wall surfaces below 8 feet above the finished floor (except for administration areas not exposed to students or public use), provide abusive resistant gypsum wallboard with paper-face surface suitable for receiving decorator finish and with long edges tapered or radial eased to receive manufacturer's standard joint.
- D. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
  - 1. Core: 5/8 inch (15.9 mm), Type X.
  - 2. Long Edges: Tapered.

**GYPSUM BOARD ASSEMBLIES** 

- 3. Mold Resistance: ASTM D 3273, score of 10.
- E. Ceiling Board: Special sag-resistant gypsum ceiling board as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Ceilings, unless otherwise indicated.
  - 2. Thickness: 5/8 inch.
  - 3. Edges: Tapered.

# 2.05 ACCESSORIES:

- A. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
  - Laminating adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool. See section 07 2100 "Thermal Insulation" for additional acoustical insulation products and information.
- C. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
  - Acoustical sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
  - 2. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.
  - 1. Types: As detailed or required for finished appearance.
  - Special Shapes: In addition to conventional cornerbead and control joints, provide U-bead at exposed panel edges.
- E. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
  - 1. Tape: 2-inch-wide, creased paper tape for joints and corners, except as otherwise indicated.
  - 2. Ready-mixed vinyl-based joint compound.
  - 3. Chemical hardening type compound.
- F. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
- G. Screws for Attachment to Steel Members From 0.033 to 0.112 Inch in Thickness: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.
- H. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

# 3.01 EXAMINATION:

A. Verify that project conditions are appropriate for work of this section to commence.

#### 3.02 FRAMING INSTALLATION:

- A. Metal Framing: Install in accordance with ASTM C 754 and manufacturer's instructions.
- Suspended Ceilings and Soffits: Space framing and furring members at 16 inches on center unless other noted.
  - 1. Level ceiling system to a tolerance of 1/1200.
  - 2. Laterally brace entire suspension system.
- C. Studs: Space studs as indicated.
  - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
  - 2. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Blocking: Install mechanically fastened steel channel blocking for support of:
  - 1. Wall mounted cabinets.
  - 2. Plumbing fixtures.
  - 3. Toilet partitions.
  - 4. Toilet accessories.
  - 5. Wall mounted door hardware.
  - 6. Markerboards
  - Other wall-mounted fixtures and equipment

# 3.03 ACOUSTIC ACCESSORIES INSTALLATION:

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
  - 1. Batts may be friction-fit in place unless insulation does not fill the cavity depth, then supplementary support must be provided to hold product in place.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
  - Place one bead continuously on substrate before installation of perimeter framing members.
  - 2. Place continuous bead at perimeter of each layer of gypsum board.
  - 3. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

# 3.04 BOARD INSTALLATION:

- Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Installation on Metal Framing: Use screws for attachment of all gypsum board.
- E. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.

# 3.05 ISOLATION OF DRYWALL FROM OTHER CONSTRUCTION:

- A. Provide Perimeter Relief where non-load-bearing drywall partitions abut structural decks or ceilings or vertical structural elements. Allow not less than 1/4", nor more than 1/2" gap between
  - gypsum drywall and structure. Finish edges of drywall face layer with square-nose metal casing bead and caulk space between casing bead and structure with continuous sealant bead. Attach drywall to studs not less than 1/2" below bottom edge of ceiling track flanges and to first stud adjacent to vertical tracks. Do not attach drywall directly to tracks.
- B. Where Drywall Partitions Intersect Masonry Walls, provide control joint not less than 1/4", nor more than 3/8" wide between gypsum wallboard and masonry. Finish the exposed edges of gypsum board with square nose metal casing bead and caulk space between casing bead and masonry with continuous sealant bead. Caulking of the joint will be at the architect's discretion depending on craftsmanship of the condition. It is preferred that the joint not be caulked

# 3.06 INSTALLATION OF TRIM AND ACCESSORIES:

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
  - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
  - 2. At exterior soffits, not more than 30 feet apart in both directions.
  - 3. Where ceilings and soffits are greater than 30' runs and do not exceed 12' in width.
  - 4. Where ceilings or wall areas exceed 300 sq. ft.
  - 5. At the strike side of doors extending from the top of door frame to 8" above ceiling.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

# 3.07 JOINT TREATMENT:

- A. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
  - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  - 2. Level 2: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

As a minimum, Level 4 finishing shall be required for this project where GWB is exposed to view. In areas not exposed to view, provide as a minimum Level 2 finishing procedures.

# 3.08 TOLERANCES:

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

# **END OF SECTION**

# PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes acoustical tiles and concealed suspension systems for ceilings.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Coordination Drawings: Drawn to scale and coordinating acoustical tile ceiling installation with hanger attachment to building structure and ceiling mounted items. Show size and location of initial access modules.
- C. Samples: For each exposed finish.
- D. Product test reports.
- E. Research/evaluation reports.
- F. Maintenance data.

#### 1.3 QUALITY ASSURANCE

- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory.
- B. Fire Test-Response Characteristics:
  - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical tile ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
    - a. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 2. Surface-Burning Characteristics: Acoustical tiles complying with ASTM E 1264 for **Class A** materials, when tested per ASTM E 84.
    - a. Smoke-Developed Index: 450 or less.
- C. Seismic Standard: Comply with the following:
  - 1. Ceilings shall be installed using Seismic Design Category "C" guidelines.

# 1.4 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Acoustical Ceiling Units: Full-size tiles equal to 0.5 percent of quantity installed.

ACOUSTICAL TILE CEILINGS

3. Suspension System Components: Quantity of each concealed grid and exposed component equal to 0.5 percent of quantity installed.

#### PART 2 - PRODUCTS

# 2.1 ACOUSTICAL TILE CEILINGS, GENERAL

- A. Acoustical Tile Standard: Comply with ASTM E 1264.
  - Recycled Content: Provide acoustical tiles with recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 48 percent by weight.
- B. Metal Suspension System Standard: Comply with ASTM C 635.
  - 1. Recycled Content: Provide products made from steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 3 percent.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
  - Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.
- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
  - 1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.
- E. Seismic struts and seismic clips.
- F. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

# 2.2 ACOUSTICAL TILES FOR ACOUSTICAL TILE CEILING

# A. ACT-1:

 Armstrong #1728A, 24x24x5/8" Fine Fissured / HumiGuard Plus with minimum .55 NRC. Use Armstrong Prelude #7301 HD Grid and #7800 Wall Molding. Armstrong BERC Clips must be used on all perimeter tees. Maintain required clearance between perimeter tees and wall molding per manufacturer's written instructions..

ACOUSTICAL TILE CEILINGS

2. The above selections are for bidding purposes. Intent of specification is to match existing acoustical tile ceiling system products in the first floor Library space.

#### PART 3 - EXECUTION

# 3.1 INSTALLATION

- A. Comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders.
- C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  - 1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
  - 2. Do not attach hangers to steel deck tabs or to steel roof deck.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

END OF SECTION 09 5123

# PART 1 - GENERAL

# 1.1 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Concrete masonry units (CMU).
  - 2. Steel.
  - 3. Wood.
  - 4. Gypsum board.

# 1.2 RELATED WORK SPECIFIED IN OTHER SECTIONS:

The following categories of work are not included as part of the painter-applied finish work or are included in other sections of the specifications except as otherwise shown on drawings or specified herein.

- 1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal items, hollow metal work and shop-fabricated or factory built metal mechanical and electrical equipment or accessories.
- 2. Pre-Finish Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switches, gear and distribution cabinets. Mechanical equipment that does not have finish paint will be painted under this section.
- 3. Concealed Surfaces: Unless otherwise indicated, painting is not required on wall or ceiling surfaces in concealed areas and inaccessible areas, such as foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts, and elevator shafts, as applicable to this project. Paint all piping, equipment and other items in these spaces as required.
- 4. Finish Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials shall not be painted, except as otherwise specified.
- 5. Operating Parts and Labels: Do not paint any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts, unless otherwise indicated. Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
- 6. Colors: Paint colors will be as selected by the Architect. Before any painting is done the Architect will furnish the Contractor with the selected color chips and schedule showing where the various colors will be applied. Finish colors shall exactly match the color chips. There will be a minimum of 14 colors used in this project. Color changes will be made at accent walls in rooms, door frames to walls, soffits in ceilings, breaks in walls, flutes in columns, column details at bases, column detail at capitols and at other breaks, changes in planes and elsewhere as deemed necessary by the Architect.

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# 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each finish and for each color and texture required.

# 1.4 LIST OF PROPOSED MATERIALS

A. List of Proposed Materials: Verify, in writing, that products proposed are from products listed herein. This submittal shall include full identifying product names and catalog numbers. Materials for prime coats, undercoats, finish coats and thinning applied to same surface shall be produced by the same manufacturer.

# 1.5 QUALITY ASSURANCE

- A. MPI Standards:
- Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
- 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
  - B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
- 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
  - a. Wall and Ceiling Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
  - b. Other Items: Architect will designate items or areas required.
- 2. Apply benchmark samples after permanent lighting and other environmental services have been activated.
- 3. Final approval of color selections will be based on benchmark samples.
  - a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

# 1.6 DELIVERY AND STORAGE

A. Deliver materials to job in original containers with labels intact and seals unbroken. Store materials and painters tools in a single room assigned for this use only. Keep storage place clean and neat and damage to it shall be corrected. Keep paint and other volatile material tightly covered at all times when not in actual use. Remove soiled and oily rags and waste from building every night and take every precaution to prevent spontaneous combustion.

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#### 1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
- 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

# 1.8 JOB, WEATHER, AND TEMPERATURE CONDITIONS

- A. Interior Painting: Maintain temperature in building at constant 65 degrees F. or above, during drying of plaster and masonry and provide adequate ventilation for escape of moisture from building in order to prevent mildew, damage to other work and improper drying of paint. Once painting has commenced, provide constant temperature of 65 degrees F. or above, and prevent wide variations in temperature which might result in condensation on freshly painted surfaces. Before painting is started in any area, broom clean it and remove excessive dust from all areas to be painted. Broom cleaning, after painting operations begin in a given area will not be allowed; cleaning shall then be done with only commercial vacuum cleaning equipment. Provide adequate illumination in all areas where painting operations are in progress.
- 1.9 COOPERATION WITH OTHER TRADES: Schedule this work and coordinate it with other trades and do not proceed until other work and/or job conditions are as required to achieve satisfactory results. Examine drawings and specifications for the work of various other trades and become familiar with all their provisions regarding painting. Surfaces that are left unfinished by requirement of other sections shall be painted or finished as part of the work covered by this section.

# 1.10 INSPECTION OF SURFACES:

- A. Examine surfaces to receive paint finishes, in accord with Contract Conditions, for defects which cannot be corrected by procedures specified herein under "Preparation of Surfaces" and which might prevent satisfactory painting results. Do not proceed with work until such defects are corrected. Commencing of work constitutes acceptance of surfaces and thereafter, Contractor shall be responsible for satisfactory results as required herein.
- B. Painting of Previously Painted Surfaces: The painter shall determine paint compatibility with specified products and surfaces previously painted. Should paints be non-compatible, notify the architect. Otherwise, lightly sand or treat surfaces as recommended by the manufacturer prior to installation of paint.

# PART 2 - PRODUCTS

- 2.1 Approved Manufacturers:
  - 1. Sherwin-Williams
  - 2. Rose Talbert
  - 3. Pittsburgh Paints
  - 4. Benjamin Moore

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# 2.2 PAINT, GENERAL

- A. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
  - 1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
  - 2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
  - 3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  - 4. Floor Coatings: VOC not more than 100 g/L.
  - 5. Shellacs, Clear: VOC not more than 730 g/L.
  - 6. Shellacs, Pigmented: VOC not more than 550 g/L.
  - 7. Flat Topcoat Paints: VOC content of not more than 50 g/L.
  - 8. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
  - Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  - 10. Floor Coatings: VOC not more than 100 g/L.
  - 11. Shellacs, Clear: VOC not more than 730 g/L.
  - 12. Shellacs, Pigmented: VOC not more than 550 g/L.
  - 13. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
  - 14. Dry-Fog Coatings: VOC content of not more than 400 g/L.
  - 15. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
  - 16. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.
- C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
  - 1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
  - Restricted Components: Paints and coatings shall not contain any of the following:
    - a. Acrolein.
    - b. Acrylonitrile.
    - c. Antimony.
    - d. Benzene.
    - e. Butyl benzyl phthalate.
    - f. Cadmium.
    - g. Di (2-ethylhexyl) phthalate.
    - h. Di-n-butyl phthalate.
    - i. Di-n-octyl phthalate.

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INTERIOR PAINTING

- j. 1,2-dichlorobenzene.
- k. Diethyl phthalate.
- I. Dimethyl phthalate.
- m. Ethylbenzene.
- n. Formaldehyde.
- o. Hexavalent chromium.
- p. Isophorone.
- q. Lead.
- r. Mercury.
- s. Methyl ethyl ketone.
- t. Methyl isobutyl ketone.
- u. Methylene chloride.
- v. Naphthalene.
- w. Toluene (methylbenzene).
- x. 1,1,1-trichloroethane.
- y. Vinyl chloride.
- D. Colors: As selected by Architect from manufacturer's full range.
- 2.3 PREPARATION AND APPLICATION CLEANING: The Painting Contractor will not only protect his work at all times, but will also protect all adjacent work and materials by suitable covering or other method during the progress of his work. Upon completion of the work, he is to remove all paint and varnish spots from the premises, all rubbish and accumulated materials and he is to leave the work in a clean, orderly and acceptable conditions.

## PART 3 - EXECUTION

# 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Concrete: 12 percent.
  - 2. Masonry (CMU): 12 percent.
  - 3. Wood: 15 percent.
  - 4. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  - Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

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INTERIOR PAINTING

## 3.2 PREPARATION AND APPLICATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- D. Painting Mechanical and Electrical Work: Paint only walls and floor in equipment rooms when scheduled, unless noted otherwise. Paint items exposed in equipment room spaces (when indicated) and occupied spaces including, but not limited to, the following:

## 1. Mechanical Work:

- a. Uninsulated metal piping.
- b. Pipe hangers and supports.
- c. Tanks that do not have factory-applied final finishes.
- d. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
- e. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
- f. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

## 2. Electrical Work:

- a. Switchgear.
- b. Panelboards.
- c. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

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INTERIOR PAINTING

# 3.3 INTERIOR PAINTING SCHEDULE

# A. CMU Substrates:

- 1. High-Performance Industrial Finish Coat Systems:
  - a. Prime Coat: B25W25 Preprite Block Filler
  - b. Intermediate: DTM Acrylic Semigloss B66W200(S/G) or DTM Acrylic B66W100 (Gloss). (semigloss).
  - c. Finish Coat: DTM Acrylic Semigloss B66W200(S/G) or DTM Acrylic B66W100 (Gloss). (semigloss).

## B. Steel Substrates:

- 1. Fast-Drying Water-based Enamel System:
  - a. Prime Coat: Pro-Industrial ProCryl Universal Metal Primer B66W310.
  - b. Intermediate Coat: SherCryl HPA B66 300 Series (gloss).
  - c. Topcoat: SherCryl HPA B66 300 Series (gloss).
- C. Dressed Lumber Substrates: Interior wood trim and grilles.
  - 1. Latex System:
    - a. Prime Coat: : B19WV1002 Acrylic Primer 102.
    - b. Intermediate Coat: SherCryl HPA B66 300 Series (gloss).
    - c. Topcoat: SherCryl HPA B66 300 Series (gloss)

# D. Gypsum Board Substrates:

- 1. Latex System:
  - a. Prime Coat: Preprite 200 Latex Wall Primer B28W200.
  - b. Intermediate Coat: ProMar 200 Latex Eg-Shel (B20W200 Series),
  - c. Topcoat: ProMar 200 Latex Eg-Shel (B20W200 Series)

END OF SECTION 09 9123

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STATE PROJECT NO.: H34-9517 MISCELLANEOUS SPECIALTIES

#### 1.0 GENERAL:

- 1.1 SCOPE: This section of the specifications and related drawings describe requirements pertaining to miscellaneous specialty items.
- 1.2 MANUFACTURERS: In order to define minimum, acceptable requirements for quality, function, sizes, gauges, grades, color, etc. for manufactured products, the specifications for materials designate brand names of products that conform to those requirements and that are acceptable. Equivalent products of other manufacturers may be proposed for consideration under conditions set forth in section entitled "Instructions to Bidders", paragraph entitled "or equal clause".

## 1.3 SUBMITTALS:

- A. Manufacturer's Data: For information only, submit two copies of manufacturer's specifications and installation instructions for each item under this section. Indicate by transmittal form that copy of instructions and recommendations have been distributed to the installer.
- B. Shop Drawings: Submit shop drawings for each of items specified, which are not fully dimensioned on manufacturer's data sheets.

## 2.0 PRODUCTS

2.1 FIRE EXTINGUISHERS: Furnish and install multipurpose fire extinguishers Model MP-10 as manufactured by Larsen's Manufacturing Company, JL Industries, or approved equal. Extinguishers shall be completely charged and furnished with 2409-RM. All Kitchen fire extinguishers are to be "K" Class rated. Cabinet shall be white aluminum with red vertical die cut letters. Provide semi-recessed cabinets and extinguishers in all spaces except Janitor's closets, mechanical rooms, electrical rooms and machine rooms. Provide wall bracket No. 846 for these locations. Non-rated cabinets are acceptable in non-rated walls. All extinguishers and accessories are to be provided in accordance to the Authorities Having Jurisdiction.

TOP OF CABINET TO BE 4'- 0" A.F.F. Supply extinguishers per the following schedule:

Cabinets, brackets and extinguishers shall be as follows:

<b>Location</b> All locations except as noted below	Mounting Brackets Semi-recessed cabinet (2½") #FS-2409- 6R with baked on white finish. Door shall be vertical duo with baked on white finish and red vertical die cut lettering mounted on tempered glass.	Cabinet Type MP-10 (A multipurpose extinguisher fully charged with 10 lbs. of dry chemical for A, B, C class fires).
Mechanical Rooms, Electrical Rooms	Wall mounted with bracket number B-2.	Type DC-10 (An extinguisher fully charged with 10 lbs of dry chemical for A, B, C class fires).

## 3.0 EXECUTION

3.1 INSTALLATION: Product specified in this section shall be installed in accordance with details shown on the drawings and with manufacturer's recommendations and shop drawings, as applicable. All extinguishers must have dated tag and be certified.

**END OF SECTION 10 9100** 

# 1.0 GENERAL

## 1.1 DESCRIPTION OF WORK:

- A. Provide all labor, materials and equipment necessary for the complete installation of all casework shown on drawings specified herein.
- B. This work includes all modular units in increments of 1" in width. Special, custom and modified units may be furnished as an option.
- C. Work Not Included: Rubber or vinyl base, general millwork, floors or ceilings required for reinforcement and support, sinks and fittings, and electrical work.
- D. All casework manufacturers shall be required to meet <u>all</u> requirements of these specifications.

## 1.2 RELATED SECTIONS

A. Electrical service fixtures: Division 26.

# 1.3 DEFINITIONS:

- A. Identification of casework components and related products by surface visibility.
  - 1. Open Interiors: Any open storage unit without solid door or drawer fronts, units with full glass insert doors and/or acrylic doors, and units with sliding solid doors.
  - 2. Closed Interiors: Any closed storage unit behind solid door or drawer fronts.
  - Exposed Ends: Any storage unit exterior side surface that is visible after installation.
  - 4. Other Exposed Surfaces: Faces of doors and drawers when closed, and tops of cabinets less than 72 inches above furnished floor.
  - 5. Semi-Exposed Surfaces: Interior surfaces which are visible, bottoms of wall cabinets and tops of cabinets 72 inches or more above finished floor.
  - 6. Concealed Surfaces: Any surface not visible after installation.

# 1.4 SUBMITTALS:

A. The casework manufacturer shall furnish shop drawings on manufacturer's title block giving all details and sizes, including methods of attachment and anything pertinent to the installation work, as soon as possible after the award of the Contract. He shall include full specification requirements, including color samples of all finishes for the Architect's selection.

Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures, plus the following specific requirements.

- 1. Include section drawings of typical and special casework, work surfaces and accessories.
- Indicate locations of plumbing and electrical service field connection by others.

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- 3. Provide one set of shop drawings which includes all products within this section, engineered and built by a single source manufacturer, with seamless coordination amongst all products.
- B. Component samples: Two sets of samples for each of the following:
  - Decorative laminate color charts / 3mm PVC and ABS edgings, provide with submittal.
- C. The casework manufacturer and supplier shall keep aware of the progress of the project and shall make sure that shop drawings are furnished in adequate time so that the casework covered thereby can be fabricated and delivered in accordance with the scheduled completion.
- D. The manufacturer and/or supplier shall be responsible for making field measurements to insure proper fit of all casework items. Shop drawings shall be based on actual field measurements.
- E. All manufacturers shall submit for approval, prior to submitting show drawings, full size cabinet sample(s), showing all requirements of these specifications. After approval of sample(s), the manufacturer can then proceed to submit shop drawings for approval. Shop drawings shall be complete in all details. Submittals received without mock-up approval by architect will be not be accepted.
- F. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

## 1.5 QUALITY ASSURANCE:

- A. Manufacturer: Minimum of 5 years experience in providing manufactured casework systems for similar types of projects, produce evidence of financial stability, bonding capacity, and adequate facilities and personnel required to perform on this project.
- B. Manufacturer: Provide products certified as meeting or exceeding ANSI-A 161.1-2000 testing standards.
- C. Single Source Manufacturer: Casework, countertops and architectural millwork products must all be engineered and built by a single source manufacturer in order to ensure consistency and quality for these related products. Splitting casework, countertops and/or architectural millwork between multiple manufacturers will not be permitted.
- D. Fabricator Qualifications: Certified participant in AWI's Quality Certification Program.
- E. Installer Qualifications: Fabricator of products Certified participant in AWI's Quality Certification Program.

## 1.6 PROJECT CONDITIONS:

- A. Casework shall not be delivered to project site until dry and heated storage space is provided. The casework specified under this section is pre-finished, and precaution must be taken to protect it against damage during installation and until final acceptance.
- B. The casework contractor shall verify climatic conditions, in areas where casework is to be stored and/or placed, and note any discrepancies to the general contractor with copies to the architect prior to shipment.

- Contractor shall be responsible for all quantities as shown on casework layouts on drawings.
- D. Environmental Requirements: Do not install casework until permanent HVAC systems are operating and temperature and humidity have been stabilized for at least 1 week.
  - a. Manufacturer/Supplier shall advise Contractor of temperature and humidity requirements for architectural casework installation areas.
  - b. After installation, control temperature and humidity to maintain relative humidity between 25 percent and 55 percent.
- E. Conditions: Do not install casework until interior concrete work, masonry, plastering and other wet operations are complete.

## 1.7 WARRANTY:

- A. All materials and workmanship covered by this section will carry a five (5) year warranty from date of Substantial Completion.
- 1.8 MANUFACTURERS: Shall be a certified participant in AWI's Quality Certification Program.

## 2.0 PRODUCTS

## 2.1 ACCEPTABLE MANUFACTURERS:

- A. Manufacturer's acceptable upon compliance with the contract documents are:
  - 1. TMI Systems Dickerson, North Dakota
  - 2. Case Systems Inc, Midland MI
  - 3. Stevens Industries, Inc Teutopolis, Illinois

## 2.2 WORKMANSHIP - GENERAL:

- A. All exposed exterior vertical surfaces finished with high pressure plastic laminate, unless otherwise indicated.
- B. All parts machined for accurate fit and assembled with hardwood dowels and adhesives to result in true, square, level and plumb units.
- C. Verify dimensions of other trades to be built into casework prior to fabrication.
- D. End panels shall be doweled to receive bottom and top. Back panel shall be fully housed into cabinet sides, top and bottom to insure rigidity and a fully closed cabinet.
- E. Drawer bottom shall be fully housed into sides, back, and subfront or undermount. Sides of drawer shall be doweled to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners.
- F. Rear of cabinet back, wall, and base joints shall receive a continuous bead of hot melt adhesive to add to unit body strength and develop moisture seal.
- G. Scribe all tops and backsplashes to walls and other adjoining vertical surfaces.
- H. There shall be a maximum scribe width of 1-1/2" at all cabinets abutting walls unless shown otherwise.

## 2.3 MATERIALS:

## A. Laminated Plastics/Finishes:

- High pressure plastic laminate, GP-50, for exterior horizontal cabinet surfaces shall meet NEMA standards.
- High pressure plastic laminate, GP-28, for exterior vertical cabinet surfaces shall meet NEMA standards.
- 3. Color Selection Available:
  - a. Textured finish vertical surface grade from Wilsonart or Nevamar's standard stock colors consisting of both wood grain patterns, decorative patterns, and solid colors.
  - b. Cabinet faces to be one color unless noted otherwise on plans. Finish end panels will be same color as cabinet face from standard color selection.
  - c. Direction of wood grain to be vertical on door, end panels and exposed backs; horizontal on drawer faces, aprons and top rails.
- 4. Plastic Laminate Balancing Sheet: Selected from manufacturer's standard color line, CL-20 cabinet liner with textured surface to meet NEMA standards shall be used to balance door and drawer face and finished end face.
- 5. Solid Surface Countertops:
  - a. Shall be 13 mm (1/2" thick) with 1 ½" drop edge at exposed perimeter with eased edges.
  - b. Solid Surface material shall be grade 5 as provided by Wilsonart or approved equal.
- 6. Melamine Thermoset Decorative Panels:
  - a. Thermally fused melamine TFM laminate, NEMA Test LD 3-2005. (TFM allowed on casework interiors only, as specified below. Utilization of TFM on any exterior casework surfaces, including door and drawer faces and finished ends, will not be permitted.)
  - b. Colored melamine laminate for semi-exposed cabinet interiors behind doors and drawers selected from manufacturer's standard color line.

## B. Core Materials:

- 1. Particleboard up to 7/8 inch thick: Industrial Grade average 45-pound density particleboard, ANSI A 208.1-2009, M-2 requirements.
- 2. Particleboard 1 inch thick and thicker: Industrial Grade average 45-pound density particle-board, ANSI A 208.1-2009, M-2 requirements.
- 3. Medium Density Fiberboard 1/4 inch thick: Average 54-pound density grade, ANSI A208.2-2009 requirements.

4. MR Moisture Resistant Particleboard: Average 45-pound density particleboard, ANSI A208.1 1-2009, M-2 requirements. (for use in all Out-Building casework)

# C. Edging:

- 1. Solid, high impact, purified, color-thru, acid resistant, PVC edging machine applied with hot melt adhesives, automatically trimmed for uniform appearance.
- 2. 3mm PVC banding, machine applied and machine profiled to 1/8 inch radius for counter tops and all edges (cabinet body and shelf edges, door/drawer front edges). Provide the 3mm system at all exposed penetrations through top, sides, or fronts of cabinets or where exposed to view.
- 3. Outside edges of counters shall be eased with a  $\frac{1}{2}$ " radius.
- 4. Edging shall be by: Woodtape, Canplast or approved equal, using standard match edge colors as selected by the architect.

## D. Hardware:

- Hinges:
  - a. Heavy Duty, five knuckle 2 ¾" institutional type hinge: Hospital tip, tight pin feature with all edges eased. Hinge to be wrap-around type tempered steel, .095 inch thick. Each hinge to have nine screws, two 5mm x 13mm and seven #7, 5/8" FHWS to assure positive door attachment.
  - b. Two hinges per door to 36" in height. Three hinges per door to 70" in height and 4 hinges per door to 94" in height. Hinge to accommodate 13/16" thick plastic laminate door.
  - c. Finish to be nickel plated.
  - Other fully concealed hinges with lifetime warranty are available upon request.
- 2. Pulls: Should metal, wire type 4" long mounted with two (2) screws fastened from back. Pulls shall be chrome colored powder coated with color as approved by architect. Provide two (2) pulls for drawers over 24" wide. Other ADA compliant pull options may be acceptable when selected from manufacturer's standards of same price line as the specified 4" pull.
- 3. Drawer Slides: Regular, kneespace and pencil: 100-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers. Positive stop both directions with self-closing feature. Paper storage, 150-pound load rated epoxy coated steel slides.
- 4. Adjustable Shelf Supports: Injection molded transparent polycarbonate friction fit into cabinet end panels and vertical dividers, adjustable on 32mm centers. Each shelf support has 2 integral support pins, 5mm diameter, to interface pre-drilled holes, and to prevent accidental rotation of support. The support automatically adapts to 3/4 inch or 1 inch thick shelving and provides non-tip feature for shelving. Supports may be field fixed if desired. Structural load to 1200 pounds (300 pounds per support) without failure.
- 5. Wardrobe Rod: To be 1 1/16 inch diameter, 14 gauge, chrome steel rod supported by chrome flanges.

- 6. Sliding Door Track: Anodized aluminum double channel. Continuous top and bottom.
- 7. File Suspension System: Extruded molding integral with top of drawer box sides to accept standard hanging file folders.

## 8. Locks:

- a. Removable core, disc tumbler, cam style lock with strike. Lock for sliding 3/4 inch thick doors is a disc type plunger lock, sliding door type with strike. Lock for sliding glass/acrylic doors is a ratchet type sliding showcase lock.
- b. For multi-drawer pedestals and lateral files provide gang locks in top drawer of pedestal.
- Elbow catch or chain bolt used to secure inactive door on all locked cabinets.

# E. Specialty Items:

- Grommets:
  - a. For Cable Passage through Countertops: 2-inch (51-mm) OD minimum, color as selected by architect from manufacturer's standard colors, molded-plastic grommets and matching plastic caps with slot for wire passage.
- 2. Support Members:
  - a.Countertop support brackets: Epoxy powder coated, 11 gauge steel with integral cleat mount opening and wire management opening.
  - b. Undercounter support frames: Epoxy powder coated.
  - c.Legs: Epoxy powder coated.
- 3. Computer Keyboard Tray:
  - a.Non-articulating, undercounter mount with positive stop drawer slides.b.Articulating keyboard trays with attached mouse pad where specified by architect (see drawings).
- 2.4 FABRICATION (Detailed Requirements for Cabinet Construction):
  - Sub Base:
    - a. Cabinet Sub-Base: To be separate and continuous (no cabinet body sides-to-floor), semi-concealed fastening to cabinet bottom. Ladder-type construction in front, back and intermediates to form a secure and level platform to which cabinets attach. 3/4" pressure treated plywood.
  - 2. Cabinet Top and Bottom Wall and Base:
    - a. Base cabinet bottoms to be selected from manufacturer's standard color line of melamine laminated particle board two sides, 3/4" thick.
    - b. Solid sub-top to be 3/4" melamine for all base cabinets.
    - c. Exterior exposed wall cabinet bottoms to be CP28 High Pressure Laminate on both sides.
  - 3. Cabinet Ends:
    - a. To be selected from manufacturer's standard color line of melamine laminate particle board both sides, 3/4" thick. Holes drilled for adjustable shelves 1-1/4" on center.
    - b. Exposed exterior cabinet ends to be laminated and opposite side laminated with CL-20 cabinet liner.

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## 4. Fixed and Adjustable Shelves:

- a. To be selected from manufacturer's standard color line of melamine laminate particle board two sides. Leading exposed edge of shelves to be edged with Flat Edge PVC color as selected by the architect.
- b. Thickness: 3/4" standard shelving 30 inches and less
- c. Thickness: 1" for 30" to 36". No shelves/cabinets are to exceed 36".
- d. Stack shelving to be 1" thick.

## 5. Cabinet Backs:

- a. Standard cabinet back to be 1/2" thick. To be selected from manufacturer's standard color line of melamine for use on all cabinets with or without doors. Unexposed wall side of back to receive a continuous bead of elastic hot melt adhesive at joint between back and sides/top/bottom for sealing against moisture and further contribute to case rigidity.
- b. Exposed exterior backs to be 3/4" particle board faced with high pressure plastic laminate.

## Doors and Drawer Fronts:

a. Plastic Laminate doors and drawer fronts to be 13/16" thick for all hinged and sliding doors. Core material to be 3/4" thick, 47 lb. density particle board bonded on exterior with high pressure laminate and with colored CL-20 Cabinet Liner on interior face. Drawer fronts and hinged doors are to overlay the cabinet body. Maintain a maximum 1/8" reveal between pairs of doors, between doors and drawer front, or between multiple drawer fronts within the cabinet.

b.Top edge banded with 3mm PVC.

# 7. Drawers:

- Drawer fronts shall be applied to separate drawer body component subfronts
- b. Sides and back of drawers to be 1/2" thick white colored melamine with solid hardwood bottom edge for added screw holding strength.
- c. Exposed top edge to be Flat Edge PVC, white in color.
- d. Bottom edge of drawer sides to have solid hardwood edge band 1/2" x
   1/2" to prevent screw pullout on drawer slides.
- e. Drawer sides shall be doweled to receive front and back, machine squared and held under pressure while glued and pinned together.
- f. Drawer bottom to be white color melamine laminate, 1/4" thick, housed and glued into front, sides and back. Underside of drawer to receive continuous bead of hot melt adhesive at joint between bottom, sides, front and back for sealing and rigidity.
- g. All drawers shall have roller guides as specified.
- 8. Door / Drawer Spreaders: Provide a minimum 3/4" x 4-1/2" x full width white finished cabinet body spreaders immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, and close off reveal. Front edge to be Flat Edge PVC.

## 9. Counter Tops:

- a. Solid Surface Countertops: Shall be 13 mm (1/2" thick) with 1 ½" drop edge at exposed perimeter with eased edges.
- b. Ease outside corners with a ½" radius.

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- 10. Miscellaneous Shelving (Exposed/not in Cabinets):
  - a.Core material: 1 inch thick particleboard.
  - b.High-pressure decorative VGS laminate on both faces.
  - c.Edges: 3mm PVC, external edges and outside corners machine profiled to 1/8 inch radius.

## 3.0 EXECUTION

## 3.1 INSPECTION:

A. The casework contractor must examine the job site and the conditions under which the work under this section is to be performed, and notify the building owner in writing of unsatisfactory conditions. Do not proceed with work under this Section until satisfactory conditions have been corrected in a manner acceptable to the installer.

## 3.2 COORDINATION:

- A. Coordinate work of this section
- B. Verify site dimensions of cabinet locations in building prior to fabrication.

## 3.3 INSTALLATION:

- A. Erect casework, plumb, level, true and straight with no distortions. Shim as required. Where laminate clad casework abuts other finished work, scribe and cut to accurate fit.
- B. Adjust casework and hardware so that doors and drawers operate smoothly without warp or bind.
- C. Repair minor damage per plastic laminate manufacturer's recommendations.
- D. Shop drawings and installation instructions furnished by the manufacturer shall be strictly adhered to. Mechanics making the installation shall be experienced in this type work and capable of the highest quality of workmanship.
- E. Counter tops shall be installed flush against the wall. Provide clear silicon sealant where cabinet meets backsplash, at sinks and where required for sanitation. Provide paintable latex caulking at tops of backsplash, and around ends of counter tops where they meet wall surfaces. Verify colors of paintable caulking with the architect.
- F. The Contractor for the work of this section shall cut all openings in counter tops for sinks or other items required. Cut to size from template furnished by supplier of sinks or use sinks on job.
- G. The Installer of the cabinet work shall make use of filler stations and scribe panels to fit cabinet work into specific dimensions.
- H. Exposed fasteners are not acceptable. Ant exposed fasteners shall be stainless steel.

# 3.3 FIELD QUALITY CONTROL:

A. All defective workmanship or damaged components shall be corrected, repaired or replaced, as requested by the Architect, without further cost to the Owner.

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B. General Contractor is responsible for protection of casework from damage to other trades upon completion of installation by casework supplier.

## 3.4 ADJUSTMENT:

A. Provide all door bumpers, drawer slides, etc., after installation to provide proper operation.

## 3.5 CLEANING:

- A. Exposed surfaces, edges and cabinet interiors shall be cleaned and all construction and installation marks removed prior to acceptance by Owner.
- B. Supplier of this equipment shall be responsible for the immediate removal and disposal of all trash, crating, etc.

**END OF SECTION** 

# SECTION 23 0010 - GENERAL PROVISIONS - HVAC

#### PART 1 – GENERAL

## 1.1 SCOPE:

A. Bids of work covered by each section of these specifications shall be based on the layout and equipment as shown and specified with only such approved substitutions as are allowed. Drawings show general arrangement of ductwork and piping. Because of small scale of drawings, it is not possible to indicate all offsets, fittings, and accessories, which may be required. Contractor shall carefully investigate structural and finish conditions affecting his work and shall arrange such work accordingly, furnishing such fittings, traps, valves, and accessories as may be required to meet such conditions. Where locations make it necessary or desirable from Contractor's standpoint to make changes in arrangements or details shown on drawings, he may present suggestions for such changes and obtain Engineer's approval prior to making such changes.

## 1.2 CODES:

A. All work under this division shall be in strict compliance with "International Codes" and all applicable Codes and Regulations of the Authority Having Jurisdiction.

## 1.3 MATERIAL AND SHOP DRAWINGS:

- A. Use only new materials and the standard product of a single manufacturer for each article of its type unless specifically mentioned otherwise. Materials and workmanship in the case of assembled items shall conform to the latest applicable requirements of NFPA, ASME, NEC, ASTM, AWWA, NEMA, and ANSI.
- B. Schedule submittals to expedite work. Unless otherwise indicated in this Section, submittals shall be submitted within 30 days of date of Notice to Proceed. Provide electronic copies of submittals in PDF format for review and approval. All submittals shall be bound in a single volume. Partial lists will not be considered and will be returned to the Contractor. Controls may be submitted separately and shall be submitted no later than 60 days of notice to proceed. Identify Project, Contractor, subcontractor, supplier, manufacturer, pertinent drawing sheet and detail numbers, and associated specification section numbers. A table of contents shall be included in the front of the submittal with tabs indicating each section. Identify variations from requirements of Contract Documents.

# C. Contractor responsibilities:

1. Review submittals prior to transmittal. Verify compatibility with field conditions and dimensions, product selections and designations, quantities, and conformance of submittal with requirements of Contract Documents. Return non-conforming submittals to preparer for revision rather than submitting to Engineer. Coordinate submittals to avoid conflicts between various items of work. Failure of Contractor to review submittals prior to transmittal to Engineer shall be cause for rejection. Incomplete, improperly packaged, and submittals from sources other than Contractor will not be accepted. Submittals not stamped APPROVED and signed by the Contractor will be returned to the Contractor.

- 2. Where required by specifications or otherwise needed, prepare drawings illustrating portion of work for use in fabricating, interfacing with other work, and installing products. Prepare ¼" per foot scale drawings of all mechanical rooms when substituting items of equipment that are not the basis for design. All equipment submitted shall be of adequate size and physical arrangement to allow unobstructed access when installed, for routine maintenance, coil removal, shaft removal, motor removal and other similar operations. Contract Drawings shall not be reproduced and submitted as shop drawings. Drawings shall be 8-1/2 by 11 inches minimum and 24 by 36 inches maximum. Title each drawing with Project name and reference the sheet the drawing corresponds to.
- 3. Provide product data such as manufacturer's brochures, catalog pages, illustrations, diagrams, tables, performance charts, and other material which describe appearance, size, attributes, code and standard compliance, ratings, and other product characteristics. Provide all critical information such as reference standards, performance characteristics, capacities, power requirements, wiring and piping diagrams, controls, component parts, finishes, dimensions, and required clearances. Submit only data which are pertinent. Mark each copy of manufacturer's standard printed data to identify products, models, options, and other data pertinent to project.
- 4. Control diagrams: Show relative positions of each component as a system diagram. Provide points list, wiring diagram and schedule of all products and components used in system.
- 5. Engineer will review and return submittals with comments. Do not fabricate products or begin work which requires submittals until return of submittal with Engineer acceptance. Promptly report any inability to comply with provisions. Revise and resubmit submittals as required within 15 days of return from Engineer. Make re-submittals under procedures specified for initial submittals. Identify all changes made since previous submittal.

# D. Engineer Review:

- Engineer will review submittals for sole purpose of verifying general conformance with design concept and general compliance with Contract Documents. Approval of submittal by Engineer does not relieve Contractor of responsibility for correcting errors which may exist in submittal or from meeting requirements of Contract Documents. After review, Engineer will return submittals marked as follows to indicate action taken:
- 2. No Exception: Part of work covered by submittal may proceed provided it complies with requirements of Contract Documents. Final acceptance will depend upon that compliance. The term "approved" shall only indicate that there is no exception taken to the submittal.
- No Exception As Corrected: Part of work covered by submittal may proceed provided it complies with notations and corrections on submittal and requirements of Contract documents. Final acceptance will depend upon that compliance.
- 4. Revise And Resubmit: Do not proceed with part of work covered by submittal including purchasing, fabricating, and delivering. Revise or prepare new submittal in accordance with notations and resubmit.

## E. Samples:

 Submit samples to illustrate functional and aesthetic characteristics of products with all integral parts and attachment devices. Include full range of manufacturer's standard finishes, indicating colors, textures, and patterns for A/E selection. Submit the number of samples specified in individual specification sections. One sample will be retained by A/E.

# F. Items Requiring Submittal are as Follows:

- 1. Insulation
- 2. All items listed in MANUFACTURERS: Section of 230010

#### 1.4 ASBESTOS:

- A. At any time the Contractor encounters asbestos, he shall immediately stop work in the immediate area and suspend any further work until asbestos is removed. Contractor shall, upon discovery of asbestos, notify owner, or owner's representative, who shall be responsible for the removal of the asbestos, all in accordance with NESHAP (National Emission Standard for Hazardous Air Pollutants). Any form of asbestos removal or demolition shall be by owner. Engineer is not an "Owner or Operator" as defined under NESHAP.
- B. Contractor is responsible for, and shall be aware of all state and federal laws pertaining to asbestos as well as NESHAP requirements.

## 1.5 LEAD FREE:

A. All solder, flux and pipe used in water system must be lead free. Lead free is defined as less than 0.2 percent lead in solder and flux and less than 8.0 percent lead in pipes and fittings.

# 1.6 AMERICANS WITH DISABILITIES ACT:

A. All items or work under this division of the specifications shall comply with guidelines as set forth in the Americans With Disabilities Act.

## 1.7 PERMITS AND FEES:

A. Obtain permits, licenses, pay fees, etc. as required for performance of Contract. Arrange for necessary inspections required by governing authority and deliver certificates of approval to Architects or their representatives. File plans required by governing body.

## 1.8 DEFINITIONS:

- A. In this division of the specifications and accompanying drawings, the following definitions apply:
- B. Provide: To purchase, pay for, transport to the job site, unpack, install, and connect complete and ready for operation; to include all permits, inspections, equipment, material, labor, hardware, and operations required for completion and operation.
- C. Install (Installed): To furnish and install complete and ready for operation.

- D. Furnish: To purchase, pay for, and deliver to the job site for installation by others.
- E. The Mechanical Contractor is cautioned that "furnish" requires coordination with others. Such coordination costs shall be included as part of Mechanical Contractor's bid.

## 1.9 CUTTING AND PATCHING:

- A. Cutting of walls, floors, roofs, partitions, and ceiling, required for proper installation of the systems shall be performed under this contract.
- B. Cutting shall be done in a neat, workmanlike manner. No joist, beams, girders, columns, or other structural members may be cut without written permission from the Engineer. When possible, holes shall be saw-cut or core drilled neat to minimize patching.
- C. Re-routing of existing pipes, insulation, etc. as required for installation of new system is included in this work. All work shall be done in accordance with specifications for new work of the particular type involved.
- D. Patching shall be performed to match existing structures, exterior walls and roofs, and shall form watertight installation. Where existing ductwork, pipe or other items are removed, the walls, floors, roofs, partitions or ceilings shall be patched to match existing finishes by this contractor.

## 1.10 VERIFICATION OF DIMENSIONS, ETC.:

A. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work, working conditions, verify all dimensions in the field, advise the Engineer of any discrepancy, and submit shop drawings of any changes he proposes to make in quadruplicate for approval before starting the work. Contractor shall install all equipment in a manner to avoid building interference.

# 1.11 COORDINATION WITH OTHER TRADES:

- A. Coordinate all work of each section with work of other sections to avoid interference. Bidders are cautioned to check their equipment against space available as indicated on drawings, and shall make sure that proposed equipment can be accommodated. Before beginning work under each section, inspect installed work of other trades and verify that such work is complete to the point where the installation may properly begin.
- B. Where equipment supplied by an approved manufacturer is substituted for the specified equipment, the Contractor will be responsible for coordinating any changes required in his work or other trades work, including but not limited to electrical requirements, structural steel requirements and space requirements. Any additional costs required to make changes to other trades work shall be borne by this contractor.

## 1.12 PROTECTION OF ADJACENT WORK:

A. Protect work and adjacent work at all times with suitable covering. All damage to work in place caused by Contractor shall be repaired and restored to original good and acceptable condition using same quality and kinds of materials as required to match and finish with adjacent work.

# 1.13 EXISTING EQUIPMENT AND MATERIALS:

A. All items of equipment removed under this section of the specifications shall become the property of this Contractor shall be promptly removed from this site.

## 1.14 FIRESTOPPING:

- A. Provide firestopping for all mechanical penetrations through fire resistant walls and shaft enclosures, and floor, ceiling, and roof elements of fire resistant assemblies. Firestopping shall provide rating comparable to rating of structure it protects.
- B. Firestopping materials currently classified with UL as "Through Penetration Firestop Systems".
- C. Firestopping materials shall have been tested in accordance with UL 1479 "Fire Tests of Through Penetration Firestops".

## 1.15 CLEAN-UP:

A. At the completion of the contract work, all areas where work has been performed shall be left clean. All trash shall be removed from the site by the Contractor.

# 1.16 APPROVALS AND SUBSTITUTIONS:

- A. Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make or catalog number, such references shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may at his option use any article, device, product, material, fixture, or type of construction which, in the judgment of the Engineer, expressed in writing, is equal to that specified.
- B. Requests for written approval to substitute materials or equipment considered by the Contractor as equal to those specified, shall be submitted for approval to the Engineer ten (10) days prior to bid date. Requests shall be accompanied by samples, descriptive literature and engineering information as necessary to fully identify and evaluate the product. No increase in the contract sum will be considered when requests are not approved.
- C. The Contractor shall bear the burden and cost of coordinating with all trades any changes in work required by substitutions, including but not limited to electrical connections, additional components required, service clearance, etc.

## 1.17 AS-BUILT DRAWINGS:

- A. The Contractor shall keep a record set of drawings on the job; and as construction progresses shall show the actual installed location of all items, material, and equipment on these job drawings. Indicate approved changes in red ink.
- B. At the time of final completion, a corrected set of As-Built drawings shall be delivered to the Engineer. A final set of reproducible drawings with job information that reflects the actual installation shall be prepared by the Engineer and given to the Owner.

#### 1.18 WARRANTY:

- A. The Contractor for each section of the work under this division will furnish to the Owner a written warranty for the installation as installed, including controls and all other equipment covered under each section of the specifications, to perform in a quiet, efficient, and satisfactory manner with no more than normal service.
- B. Each warranty shall extend for a period of one year following substantial completion and acceptance of construction. They shall be endorsed by the Contractor. Refrigeration compressors shall have a five (5) year warranty.

# 1.19 MANUFACTURERS:

- A. In order to define requirements for quality and function of manufactured products, and requirements such as size, gauges, grade selection, color selections and like specifications requirements, the specifications as written hereinafter are based upon products of those manufacturers who are named hereinafter under various specifications for materials.
- B. In addition to products of manufacturers named hereinafter in the specifications, equivalent products of the following named manufacturers will be acceptable under the base bid:
  - Air Distribution:
    - a) Metal Industries, Price Company, Titus Manufacturing Company, Nailor Industries, Anemostat Products Division, Krueger, J & J Register Co., Carnes Company, Tuttle and Bailey, AirGuide Manufacturing

# 2. Insulation:

a) Owens Corning, Johns Manville, CertainTeed Corporation, Knauf Insulation

## PART 2 - PRODUCTS

## 2.1 PAINTING:

- A. Furnish touch up paint supplied by equipment manufacturer.
- B. Coat ferrous metal surfaces that do not have factory painting or galvanizing with one coat of Sherwin Williams high heat aluminum paint.

## PART 3 - EXECUTION

## 3.1 CLEANING:

A. All surfaces on metal, pipe, insulation covered surfaces, and other equipment furnished and installed under this division of the specifications shall be thoroughly cleaned of grease, scale, dirt and other foreign material.

B. Upon complete installation of ducts, clean entire system of rubbish, plaster, dirt, etc., before installing any outlets. After installation of outlets and connections to fans are made, blow out entire system with all control devices wide open.

# 3.2 SYSTEM BALANCING:

- A. The HVAC Contractor is responsible for the entire Test & Balance process. The contractor shall employ an independent balancing firm specializing in total system air balancing as approved by the engineer and certified by the AABC or NEBB. The balancing firm shall be employed prior to installation of any ductwork. Provide all labor, engineering and test equipment required to test, adjust, and balance all exhaust systems.
- B. The Contractor is responsible to have a functioning system prior to Testing and Balancing, to provide a joint and cooperative effort to coordinate the test and balance, and to solve any problems in balancing and controls in order to establish proper system performance before leaving the job. The Contractor is responsible for providing the Test and Balance Agency (TAB) with a complete set of project drawings, specifications, and submittals, and for providing and installing new sheave or sheaves, new belts, as required, if a change in fan speed is necessary which cannot be made by adjusting the sheave originally installed. When requested by the Engineer, the TAB Agency will review plans and specifications of the systems prior to installation and submit a report of any deficiencies, which could preclude proper adjusting, balancing and testing of the system. The TAB agency shall submit copies of deficiency reports along with a preliminary report to the Engineer for review prior to final submittal.
- C. Instruments used will be those that meet the instrument requirements for Agency Qualifications of the AABC as published in the NEBB "Procedural Standards for Testing Adjusting and Balancing of Environmental Systems" or the AABC "National Standards for Total System Balance".
- D. Diffuser air volume shall be adjusted to within 10% of design.
- E. Reporting (Submit five copies of final Test Report)
  - 1. Design and actual duct and diffuser volumes. Prepare a diagram showing flow measurement points.

End of Section 23 0010

## SECTION 23 0500 - HEATING, VENTILATION and AIR CONDITIONING

## PART 1 - GENERAL

# 1.1 General Requirements:

- A. This Section of the Specifications and related drawings describe requirements pertaining to Air Conditioning, Heating and Ventilation work, including applicable HVAC Insulation in separate Section 230700. All work shall comply with Section 230010 General Provisions HVAC.
- B. Construct rectangular ductwork to meet all functional criteria defined in Section VII, of the SMACNA "HVAC Duct Construction Standards Metal and Flexible" 2005 Edition. All ductwork must comply with all local, state and federal code requirements.

## PART 2 - PRODUCTS

## 2.1 SUBMITTALS:

A. Ductwork shop drawings must be submitted for approval by Engineer. Any ductwork installed without prior approval by the Engineer shall be replaced at the expense of the contractor.

## 2.2 QUALITY ASSURANCE:

A. The contractor must comply with this specification in its entirety. At the discretion of the Engineer, sheet metal gauges, and reinforcing may be checked at various times to verify all duct construction is in compliance.

## 2.3 DUCTS, PLENUM, ETC.:

- A. As indicated on drawings, provide a system of metal ducts for supply, return and exhaust air.
- B. All sheet metal, ducts, casing, plenums, etc., of sizes indicated, shall be constructed from prime galvanized sheet steel.

# 2.4 DUCTS THRU WALLS:

- A. Provide sheet metal flashing around all duct penetrations.
- B. Ducts shall be properly sealed per the fire rating and UL assembly.

## 2.5 AIR DISTRIBUTION:

- A. Devices shall quietly and draftlessly deliver and/or remove air quantities required to attain conditions indicated. Exposed surfaces shall have baked enamel finish of manufacturer's standard colors noted.
- B. All air distribution equipment and accessories shall be as scheduled on drawings.

## 2.6 METAL DUCTWALL:

- A. All interior ducts shall be constructed of G-90 or better galvanized steel (ASTM A653) LFQ, chem treat. Exterior ductwork or duct exposed to high humidity conditions shall be constructed of G-90 or better galvanized steel LFQ, chem treat. Galvanized metal ducts shall be a minimum thickness of 24 gage.
- B. Low Pressure Supply, Return, and Exhaust Duct:
  - 1. Ductwork downstream from the VAV box, ductwork on low pressure supply and return systems and restroom exhaust duct shall be fabricated to meet minimum 2" w.g. pressure class in accordance with SMACNA Duct Construction Standard.

## 2.7 ROUND DUCT LONGITUDINAL SEAMS:

A. Spiral seam or snap lock seam shall be used on all longitudinal seams for low pressure round duct.

## 2.8 DUCT JOINTS:

- A. Duct joints to meet criteria as defined in SMACNA's 2005 Manual, HVAC Duct Construction Standards, Metal and Flexible.
- B. Ductmate or W.D.C.I. proprietary duct connection systems will be accepted as an alternative to SMACNA duct construction standards. Duct constructed using these systems will refer to the manufacturers guidelines for sheet gauge, intermediate reinforcement size and spacing, and joint reinforcements.
- C. Ductmate 440 or a Butyl Rubber Gasket which meets Mil-C 18969B, Type II Class B, TT-C-1796A, Type II Class B, and TTS-S-001657 must also pass UL-723. This material, in addition to the above, shall not contain vegetable oils, fish oils, or any other type vehicle that will support fungal and/or bacterial growth associated with dark, damp areas of ductwork. The recommended test procedure for bacterial and fungal growth is found in 21CFR 177, 1210 closures with sealing gaskets for food containers.

## 2.9 FLEXIBLE DUCT:

- A. Flexible duct to meet criteria as defined in SMACNA's 2005 Manual, HVAC Duct Construction Standards, Metal and Flexible, or as defined within. Flexible air ducts and flexible air connectors shall be tested in accordance with UL 181, and listed and labeled as Class 0 or Class 1.
- B. Flexible duct shall be constructed with a polyethylene core with foil faced insulation.
- C. Flexible duct is not allowed in lengths greater than 5', unless otherwise noted. Bends, turns, or sagging, is not accepted.
- D. Flexible duct shall only be used for supply and return duct run out connections at diffusers and grilles. Flexible duct shall not be used for exhaust duct.

# 2.10 SEALERS:

A. Duct sealer shall be flexible, water-based, adhesive sealant designed for use in all pressure duct systems. After curing, it shall be resistant to ultraviolet light and shall seal

out water, air, and moisture. Sealer shall be UL listed and conform to NFPA 90A & 90B. Sealer shall be Childers CP-145A, or equal.

#### 2.11 **DUCTWORK HANGER/SUPPORT:**

- Α. Hang and support ductwork as defined by SMACNA, Chapter 5 2005 Manual, First Edition, or as defined within. Hanger spacing for sheet metal duct not to exceed 8'. Hanger spacing for flexible duct shall not exceed 5'.
- B. Duct supports on the exterior of the building on grade or on the roof shall be steel with a hot dip galvanized coating.

#### PART 3 - EXECUTION

#### 3.1 DUCTWORK, GENERAL:

- Α. Drawings show general arrangement of duct. Provide all ductwork required to complete installation and avoid interferences. Installation shall conform with applicable portions of Section 230010, General Provisions, HVAC. Fabricate ducts as job progresses, using actual job measurements and referring to architectural, structural, electrical, plumbing and equipment drawings in order to avoid conflicts. Where space limitations preclude use of ducts and fittings as shown, consult Engineer for instructions. All ductwork, offsets, fittings, etc. required to make a complete and efficiently operating installation are included in this contract and shall be fabricated and installed in accordance with SMACNA Standards for the application unless noted otherwise herein.
- B. All duct dimensions shown on drawings are "inside clear". The sizes of acoustically lined ducts and dampers in ducts shall be increased accordingly. Ducts shall be smooth on inside.
- Support ducts from building structure with 1 inch wide galvanized steel bands per C. SMACNA recommendations. Wire hangers and nylon straps will not be acceptable.
- D. Provide a locking quadrant balancing damper at each supply takeoff fitting and each exhaust takeoff fitting, for balancing individual diffusers and grilles.
- E. Seal all joints in supply, return and exhaust ducts with Childers CP-145 Veloseal, or McGill Airseal, DuroDyne or equal water based synthetic duct sealant, or equal.
- F. Upon complete installation of ducts, clean entire system of rubbish, plaster, dirt, etc. before installing any outlets. After installation of outlets and connections to fans are made, blow out entire system with all control devices wide open.

#### 3.2 SUBMITTALS:

Provide submittals as required in Section 230010. At completion of work, submit check-Α. out report of automatic control system. Submit start up reports per Section 230010. Submit test and balance report per 230010. Submit manufacturer's installation, operation, and maintenance instructions.

End of Section 230500

SECTION 23 0700 - HVAC INSULATION

## PART 1 - GENERAL

## 1.1 WORK INCLUDED:

- A. General Requirements: This section shall include all insulation as required for installation on all items as specified hereinafter and/or as indicated. All insulations shall be installed in a workmanlike manner by qualified workers in the employment of an independent insulation contractor. Costs of insulation shall be included as part of work by contractor as applicable to his section of work. No separate bid is to be included for insulation work.
- B. Fire hazard classification for all material shall not exceed flame spread of 25 and smoke development of 50 as classified by Underwriters Laboratories under Test Method ASTM E-84 and acceptable under NFPA Standards. This is to apply to the complete system and be a composite rating of insulation material with jacket or facings, vapor barrier, joint sealing tapes, mastic and fittings.
- C. Prior to commencing any work, submit data sheets for engineer's approval of all material proposed to be used on this project.

## PART 2 - PRODUCTS

## 2.1 DUCTWORK INSULATION:

- A. Supply, Return, and Fresh Air Return Ducts in Unconditioned Plenums:
  - 1. Insulate all, including lined and double wall spiral, metal ducts with 2" thick, 3/4 pound density duct wrap with FRK vapor barrier equal to Owens Corning Fiberglas All Service Duct Wrap.

## PART 3 - EXECUTION

# 3.1 DUCTWORK INSULATION:

- A. Flexible Insulation (External):
  - 1. Application: Insulation shall be wrapped tightly on the ductwork with all circumferential joints butted and longitudinal joints overlapped to the bottom of the rectangular duct. On ductwork over 24 inches wide, secure insulation with suitable resistance welded mechanical fasteners at not more than 18 inches on center. The 2-inch flange on the facing shall be stapled with 9/16 inch flare door stainless steel staples on 6 inch centers. Apply a three inch wide bank of Childers CP-30 LO or CP-35 or equal Vapor Barrier Coating on all joints of insulation. While tack coat is still wet, embed 3-inch wide White 10 x 10 Fiberglass reinforcing mesh and recoat fully covering the mesh. Spot all pin penetrations or punctures in the insulation with a full coat of CP-30 LO or CP-35 or equal.

End of Section 23 0700

# PART 1 - GENERAL REQUIREMENTS

## 1-01 SCOPE OF WORK

WORK INCLUDED: Furnish all necessary labor, material, plant and equipment, including materials and equipment not specifically mentioned but necessary to complete the work in a neat, correct, and workmanlike manner, to include:

- 1) Feeders, panelboards, and distribution equipment.
- 2) Complete branch circuit wiring system for lighting, receptacles, equipment, and outlets.
- 3) Lighting fixtures, wall switches, receptacles and outlets.
- 4) Line voltage connections to equipment furnished under other Sections of these specifications, including disconnects, where indicated.
- 5) Hangers and Supports for Electrical Systems, see Section 260529.
- 6) Vibration and Seismic Controls for Electrical Systems, see Section 260548.
- 7) Existing Fire Alarm System modifications, see Section 283100.

SPECIAL NOTE: The provisions of the Instructions to Bidders, General Conditions, Supplementary General Conditions and all applicable requirements of Division 1 shall govern the work under this Division the same as if incorporated herein.

# 1-02 EQUIPMENT WIRING

Furnish and install power circuits to and line voltage connections to all equipment furnished and installed by other trades, including disconnects, where indicated.

Furnish and install receptacles for equipment furnished with cord and plug, such as electric water coolers, kitchen equipment with cord and plug, computer and data processing equipment, portable welders, shop equipment, and other equipment indicated on the drawings.

VOLTAGE: The Electrical Contractor shall supply power to equipment at the voltage indicated on the electrical drawings. The Electrical Contractor and the other applicable trades will be held responsible for coordinating the equipment voltages, the control equipment wiring, and the location and type of disconnect required to comply with the equipment manufacturer's requirements, the National Electric Code, and applicable local building codes. IF EQUIPMENT IS SUPPLIED AT A VOLTAGE OTHER THAN THAT PROVIDED, THE GENERAL CONTRACTOR AND SUBCONTRACTORS WILL BE HELD RESPONSIBLE FOR MAKING ANY NECESSARY ADJUSTMENTS TO CORRECT THE CONFLICT, AT NO COST TO THE OWNER, TO THE SATISFACTION OF THE ELECTRICAL ENGINEER.

# 1-03 EXISTING CONDITIONS

The Contractor will be held responsible for having visited the site and having familiarized himself with the existing conditions prior to submitting his bid.

# 1-04 COORDINATION

OTHER TRADES: All work under this Section shall be coordinated with other trades to insure proper location of outlets and equipment connections, and to minimize conflicts with structural members, duct work, piping, etc. Conflicts between equipment and/or material locations shall be corrected as directed by the Architect-Engineer at no additional cost to the Owner.

#### 1-05 CODES AND PERMITS

Installation and materials shall be in accordance with the applicable versions of the National Electrical Code, the International Building Code, and all local codes. Apply and pay for all permits and fees required for this construction.

#### 1-06 **DRAWINGS**

The drawings and specifications shall be considered as complementary, one to the other, so that materials and labor indicated, called for, or implied by either shall be furnished and installed as if required by both. Where a disagreement exists between the plans and specifications, the item or arrangements of better quality, greater quantity, or higher cost shall be included in the base bid. Any discrepancies between the drawings, specifications, and field conditions shall be resolved with the Engineer prior to commencing work. All agreements shall be verified in writing.

RECORD DRAWINGS: The Contractor shall maintain one set of clean blueprints for "RECORD" drawings. All changes, revisions, or modifications to the project shall be recorded daily on these drawings with redline pencil. Upon completion of the project, these redline drawings shall be turned over to the Engineer for preparation of final Record Drawings.

#### 1-07 MAINTENANCE AND OPERATING MANUALS

The Contractor shall furnish the Owner two (2) complete maintenance and operating manuals for each piece of equipment and material furnished under this project. These manuals shall be bound in hard cover binders with tabs for each section item or piece of equipment. The manuals shall be furnished to the Engineer prior to the final observation, and final acceptance shall not be given until the Owner's maintenance personnel are instructed in maintenance and operation of all systems.

#### 1-08 GUARANTEE

All materials and labor furnished under this Section of the specifications shall be guaranteed by the Contractor to be free from defects for a period of one year from the date of acceptance. The Contractor shall repair or replace any deficiencies reported in the guarantee period promptly after notification, without any additional compensation from the Owner. Lamps are excluded from this warranty, except that all lamps shall be operational on the date of acceptance.

#### 1-09 **MATERIALS**

UL LISTING: All materials shall be listed by Underwriter's Laboratories, or an approved equal testing laboratory, and shall bear the "UL" Label, where applicable.

SUBSTITUTIONS: Specific reference in the specifications to any article, device, product, material, fixture, form or type of construction, etc., by name, make or catalog number, with or without the words "or equal" shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition and the Contractor in such cases may, at his option, use any article, device, product, material, fixture, form or type of construction, which in the judgement of the Architect-Engineer, expressed in writing prior to bidding as specified below, is equal to that herein named.

Requests to substitute materials or equipment considered by the Contractor as equal to those specified shall be submitted for review to the Architect-Engineer ten (10) days before bids are taken. Requests shall be accompanied by samples, descriptive literature, and engineering information, as necessary to fully identify and appraise the product. No increase in the contract sum will be considered when requests are not accepted. If the item is found to be equal, the Architect-Engineer will issue an Addendum making it a part of the Contract Documents prior to bidding.

# 1-10 SUBMITTALS

Electrical shop drawings shall be submitted in one complete package containing all items required by this specification and all other Division 26-28 specifications. Partial shop drawing submittals may be rejected by the Architect-Engineer.

Exceptions: Fire Alarm System CAD drawings, Lighting Control System CAD drawings, and Allowanced Light Fixtures may be submitted separately if additional time is needed to prepare these shop drawings.

Within 30 days after award of contract and before any materials are delivered to the site, submit one (1) digital set in pdf format Architect-Engineer on the following materials (partial/incomplete submittals may be rejected):

No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

Each tab/divider shall include project name and name and address of firm or entity that prepared submittal. Electrical submittal to include a separate transmittal letter indicating project name and address, date, contractor name and address, construction manager name and address (if applicable), list of submittals, and remarks, and signature of transmitter

Failure to comply with the above criteria my result in rejection of the submittal by the Architect-Engineer. Refer to Division 1 for additional Submittal requirements.

## PART 2 - MATERIALS

# 2-01 GENERAL REQUIREMENTS

COORDINATION: Coordinate arrangement, mounting, and support of electrical equipment to allow maximum possible headroom (unless specific mounting heights that reduce headroom are indicated), to provide for ease of disconnecting the equipment with minimum interference to other installations, to allow right of way for piping and conduit installed at required slope, and so connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

ELECTRICAL ROOM LAYOUT: Submit an Electrical Room layout drawing for each Electrical Room reflecting dimensions of actual equipment provided. Provide clearances per table 110.26(a)(1) of the NEC.

# 2-02 GROUNDING

INSULATED CONDUCTORS: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

## BARE COPPER CONDUCTORS:

- 1) Solid Conductors: ASTM B3.
- 2) Stranded Conductors: ASTM B8.
- 3) Tinned Conductors: ASTM B33.
- 4) Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
- 5) Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
- 6) Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
- 7) Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

GROUNDING BUS: Predrilled Rectangular bars of annealed copper, 1/4 by 4 inches in cross section, unless otherwise indicated; with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V.

BOLTED CONNECTORS FOR CONDUCTORS AND PIPES: Copper or copper alloy, bolted pressure-type, with at least two bolts.

WELDED CONNECTORS: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

GROUND RODS: Copper-clad steel; 3/4 inch by10 feet in diameter. Use Cadweld type "GT" or equivalent ground rod connectors as indicated on drawings.

# 2-03 RACEWAYS AND FITTINGS

GALVANIZED RIGID CONDUIT (GRC): UL 6 and ANSI C80.1 with full weight screwed fittings. Bushings shall be malleable iron. Bushings 1 1/4" and larger shall have insulated throat and grounding lug.

INTERMEDIATE GRADE METALLIC CONDUIT (IMC): UL 1242 and ANSI C80.6, galvanized, with full weight screwed fittings. Bushings shall be as specified above.

ELECTRICAL METALLIC TUBING (EMT): UL 797 and ANSI C80.3 with steel compression or setscrew type fittings. Die-cast fittings are not acceptable. Fittings 1 1/4" and larger shall have nylon insulated throat. Indented or drive-on fittings are not acceptable. Conduit used for Fire Alarm System wiring shall be red, similar to Allied Fire Alarm EMT.

FLEXIBLE STEEL CONDUIT (GREENFIELD): UL 1. Fittings shall be steel.

LIQUIDTIGHT FLEXIBLE STEEL CONDUIT (SEALTITE): UL 360. Fittings shall be steel compression type.

PLASTIC CONDUIT (PVC): Schedule 40 polyvinylchloride. NEMA Standard TC-2 and TC-3 and UL Standards. Conduit, solvent, and fittings shall all be supplied by the same manufacturer. PVC is not permitted above grade.

SURFACE METAL RACEWAY (INDOOR): Wiremold V700 ivory surface metal raceway, or acceptable equivalent. Straps, boxes, elbows, etc. shall all be supplied by the same manufacturer. Total cross-sectional area shall be a minimum of 0.25 square inches.

## 2-04 WIRE AND CABLE

UL STANDARDS: UL 44 and UL 83.

CONDUCTOR: Copper, soft drawn, per ASTM B3 and comply with NEMA WC 70. Sizes No. 12 and 10 shall be solid conductor. Sizes No. 8 and larger shall have Class B concentric stranding per ASTM B8. <u>Stranded conductors may not be used on No. 12 and No. 10 circuits.</u>

INSULATION: 600 Volt, 90°C rated, comply with NEMA WC 70. Type THHN-THWN-MTW, unless noted otherwise.

SPLICING MATERIALS:

No. 10 and smaller: Acceptable wire nuts or insulated crimped splice caps.

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No. 8 and larger: Bronze or copper split bolts, or tinned compression connectors.

(Polaris insulated splice blocks may not be used on this project).

Insulation shall be Scotch No. 23 rubber tape and Scotch No. 33 plastic tape, or approved equivalent method.

Power feeders shall not be spliced.

TYPE MC CABLE: Metal-clad cable, Type MC, rated 600 V or less, UL 1569, RoHS compliant, as manufactured by AFC, Encore Wire, or acceptable equivalent.

TYPE MC-PCS CABLE: Metal-clad cable with Class 2 / Class 3 control cables, Type MC-PCS, rated 600 V or less, UL 1569, RoHS compliant, and meets NEC 725.136(I)(1) & NEC 725.136(I)(2). AFC MC Lite Luminary Series, Encore Wire M-LED Series, Southwire MC-PCS Duo, or acceptable equivalent.

# 2-05 BOXES AND WIREWAYS

OUTLET BOXES: Galvanized sheet steel per UL 514. "Through-wall" boxes <u>SHALL NOT BE USED</u>. Back-to-back mounting of boxes is not permitted. All outlet boxes 4"x4" or smaller located on opposite sides of a rated wall shall have a minimum of 24" horizontal spacing or shall be protected with listed putty pads. All outlet boxes larger than 4"x4" (communications outlets, etc.) located in rated walls shall be protected with listed putty pads.

Box sizes shall be as follows:

- 1) Wall Receptacle Outlets: 4" square by 2 1/8" deep with plaster ring as required.
- 2) Wall Computer, Communications and TV Outlets (up to 1" conduit): 4" square by 2 1/8" deep with one gang plaster ring. Provide box with 1" conduit knockouts.
- 3) Wall Computer, Communications and TV Outlets (1 ¼" conduit):: 4 11/16" square by 2 1/8" deep with one gang plaster ring. Provide box with 1 ¼" conduit knockouts.
- 4) Ceiling outlets: 4" square or octagonal by 1 1/2" or 2 1/8" deep with stud or ears where required for fixture support.
- 5) Indoor Surface Mounted Outlets: Wiremold V5744S-2 surface metal box unless noted otherwise on the drawings (steel boxes and EMT conduit may be used in equipment rooms, ianitor's closets, storage rooms).
- 6) Exposed Outlets: Malleable iron or heavy duty cast aluminum with threaded hubs, Type FS, FD, or GS. Manufactured by Crouse Hinds, Appleton, Killark, or approved equal. Die cast boxes are not acceptable.

SUPPORT FOR RECESSED BOXES IN MASONRY WALLS: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

SUPPORT FOR RECESSED BOXES IN STUD WALLS: Support boxes from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose. Box brackets reliant on support legs pressed against back of opposing wall are not acceptable.

WIREWAYS, PULL BOXES AND JUNCTION BOXES: UL 50. NEMA 250, Type 12 unless otherwise indicated. Code gage galvanized sheet steel, aluminum, or steel primed and painted after fabrication. Manufactured by Square D, Austin Berryhill, Hoffman Engineering, B-Line Systems, or approved equal. Wireways shall have hinged covers.

HANDHOLES: Polymer Concrete unless otherwise indicated, see details on drawings. As manufactured by Hubbell (Quazite), Armorcast, CDR Systems, or acceptable equivalent.

# 2-06 WIRING DEVICES

MANUFACTURERS: All wiring devices shall be Hubbell Extra Heavy-Duty Specification Grade Series or equivalent of Arrow Hart Premium Industrial Spec Grade, Pass and Seymour Industrial Extra Heavy-Duty Spec Grade, or Leviton Industrial Spec Grade, unless specifically noted otherwise. If devices not meeting the specifications are supplied, they shall be removed, discarded, and new devices meeting the specification shall be furnished & installed by the Electrical Contractor at no cost to the Owner or the Engineer.

RECEPTACLES: 20A, 125V, 3 wire grounding, NEMA 5-20R, side and back wired, with impact resistant nylon face and standard color as selected by Architect.

- "TR" denotes Tamper-Resistant receptacle. Tamper Resistant receptacles shall be listed Tamper-Resistant receptacles per NEC Article 406.11, typical for receptacles in Dwelling Units, Kindergartens, and Childcare Areas.
- "CR" denotes indoor Corrosion Resistant receptacle. Indoor Corrosion Resistant receptacles shall be listed Weather/Corrosion Resistant receptacles per NEC Article 406.8.
- "WP" denotes weatherproof receptacle. Weatherproof receptacles shall be listed Weather/Corrosion Resistant receptacles per NEC Article 406.8 and shall include an Extra-Duty rated "In-Use" style wet location cover with shallow lockable cover.

GFCI RECEPTACLES: Feed Thru type, 20A, 125V, NEMA 5-20R, standard color as selected by Architect. All GFCI Receptacles shall be self-testing and shall be listed Tamper Resistant (NEC 406.11) and Weather Resistant (NEC 406.8).

SWITCHES: 20A, 120/277V, side and back wired, ivory color. Single pole, double pole, three way, or four way, as indicated on the drawings. Standard color as selected by Architect.

SPECIAL RECEPTACLES: Specification grade, rating as specified on the drawings.

COVER PLATES: Provide plates to suit the devices.

- 1) Finished interior walls: Jumbo Stainless Steel.
  - Receptacles noted on drawings as dedicated for computers shall include a factory engraved jumbo stainless steel coverplate labeled "COMPUTER". See Electrical Symbols and Power Plans on drawings to identify dedicated computer receptacle.
- 2) Exposed outlets: Galvanized steel.
- 3) Wet and damp locations: Weatherproof Extra-Duty rated "In Use" type with shallow lockable cover, Legrand WIUCED Series or equivalent. Provide plate kits to suite devices.

# 2-07 INTERIOR LIGHTING

FIXTURE SCHEDULE: See Drawings.

PRE-PAINTED STEEL: Fixture bodies manufactured from pre-painted steel <u>shall be painted after fabrication</u>, unless noted otherwise on the drawings.

ELECTRONIC FLUORESCENT BALLASTS: As manufactured by Universal Lighting Technologies, or approved equal. See drawings for ballasts specifications. All fluorescent ballast shall include a disconnect plug designed in accordance with NEC 410.73(G).

T8 FLUORESCENT LAMPS: Low Mercury, high CRI, high lumen output, 95% lumen maintenance. Phillips ALTO II Series or approved equal. See drawings for lamp specifications.

LED LAMPS AND DRIVERS: Refer to Lighting Fixture Schedule and Lighting Fixture Schedule Notes on Drawings.

LENSES: Virgin acrylic plastic. Nominal thickness of fluorescent fixture lenses shall be 0.125" unless noted otherwise.

EMERGENCY LIGHTING (BATTERY BACKUP): Self-contained emergency lighting for fluorescent fixtures shall have a minimum of 1400 Lumens output for 90 minutes. All emergency batteries shall be sealed, maintenance-free, high temperature nickel cadmium batteries unless noted otherwise.

EMERGENCY LIGHTING (INVERTER): Where noted, emergency lighting shall be provided by inverter unit equipment designed to operate designated fluorescent, incandescent, and LED fixtures on emergency power at their full nominal lumen rating during the full 90 minute emergency discharge cycle. Provide an output circuit breaker for protection of overload or load fault conditions. The system's voltage rating shall be field selectable 120 or 277 VAC input/output.

The inverter unit shall allow for connected emergency fixture(s) to be normally on, normally off, switched or dimmed without affecting lamp operation during a power failure. Upon utility power loss, the inverter unit shall deliver 100% of its full rated output regardless of the local switch or dimmer position, and will provide power to emergency fixtures at distances of up to 1000 feet. The housing shall be designed for surface mount installation requirements and manufactured using heavy-gauge steel with a white hammer semi-gloss scratch- resistant baked-on powder coat paint finish.

The unit's electronics shall include a self-contained inverter section with a fully automatic, thermal-compensating variable-rate battery charger, AC lockout feature, low battery voltage disconnect, DC overload, short circuit and brownout protection as standard. The unit shall utilize a sealed lead calcium battery with a 10-year design life. The inverter system shall be UL 924 Listed and labeled. The unit shall be covered under a 3-year warranty on the electronics and battery and a 7-year prorata warranty on the battery. It shall meet or exceed the requirements of UL 924, NFPA 101 Life Safety Code, NFPA 70 National Electrical Code, OSHA and State and Local codes.

## 2-08 LIGHTING CONTROLS

LOW VOLTAGE SWITCHING: <u>See details and notes on drawings.</u> Low voltage digital switching system shall be as specified on the drawings, as manufactured by Wattstopper, Acuity, Eaton (Cooper), Lutron, Crestron, Leviton, or acceptable equivalent system. Furnish and install all relays, modules, network cards, programming, software, and/or other relay panel hardware necessary for a complete and operational lighting control system. Furnish and install all emergency force-on contactors required for operation of emergency lighting upon loss of normal power. All low voltage digital wall switches to include factory engraved buttons unless specifically noted otherwise on the drawings. Provide commissioning of lighting control system as noted on the drawings.

All low voltage wiring shall be run in metal conduit or acceptable cable tray system unless noted otherwise on the drawings.

OCCUPANCY SENSORS: <u>See details and notes on drawings</u>. Occupancy sensors shall be as specified on the drawings, as manufactured by Wattstopper, Acuity, Eaton (Cooper), Lutron, Crestron, Leviton, or acceptable equivalent manufacturer. <u>Provide all power packs and mounting hardware necessary to provide a complete and operable system</u>. If a sensor other than that specified is used, furnish and install any additional sensors necessary to provide comparable coverage. Verify spacing requirements with sensor manufacturer and install accordingly. <u>Provide commissioning of occupancy sensors as noted on the drawings</u>.

1) It shall be the Contractor's responsibility to locate and aim sensors in the correct location required for complete and proper volumetric coverage within the range of coverage(s) of controlled areas per the manufacturer's recommendations. Proper judgment must be exercised in executing the installation so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of

- structural components. It shall be the Contractor's responsibility to make all proper adjustments to assure owner's satisfaction with the occupancy system.
- 2) It shall be the manufacturer's responsibility to verify all proper adjustments and train owner's personnel to ensure owners satisfaction with the occupancy system. This service shall be provided at no additional cost to the owner or the Architect/Engineer.
- 3) Upon completion of the installation, the system shall be completely commissioned by the manufacturer's factory authorized technician who will verify all adjustments and sensor placement to ensure a trouble-free occupancy-based lighting control system. This service is provided at no additional cost to the owner. The Electrical Contractor shall provide both the manufacturer and the electrical engineer with ten working days written notice of the scheduled commissioning date. Upon completion of the system fine tuning the factory authorized technician shall provide the proper training to the owner's personnel in the adjustment and maintenance of the sensors.
- 4) The Contract Documents are diagrammatic and only establish the minimum number and type of sensor required in each space. The Contractor shall furnish additional sensors as necessary to provide the required coverage. The Contractor may not reduce the number of sensors in a space or change the sensor type in a space without written permission from the Engineer and the Owner. In order to provide coverage for the controlled area and accommodate all Owner occupancy requirements, all rooms/spaces shall have between ninety (90) and one hundred (100) percent coverage. Layout of occupancy sensors on the Contract Documents represents the basis of design. The occupancy sensor supplier shall furnish shop drawings and printed material indicating layout of sensors, raceway, and wiring required to control the lighting indicated on the contract drawings. No change order will be allowed for additional sensors, raceway, wiring, power supplies, satellite relays, etc., required on shop drawings by the occupancy sensor supplier. Where power supplies are required for operation of the occupancy sensors, but are not shown on the lighting plans, the power supplies must be included as part of the base bid for this project.

CONTACTORS: Electrically held type, with 120 volt or 277 volt coil (see drawings), Hand-Off-Auto selector switch, and NEMA 1 enclosure. Contactors shall be 30 amp, 4 pole, unless otherwise noted. Manufactured by Square D, General Electric, or Eaton. Provide engraved nameplate for each contactor identifying load served.

LINE VOLTAGE PHOTOCELLS: Rated 1800 volt-amps 120V, 208V-277V, or 480V as noted on the drawings, adjustable slide gate, Precision Type "T", or equal of Intermatic, Paragon, or Tork.

LINE VOLTAGE TIME CLOCK: 7-day, 2-channel, 120V electronic programmable time control with two SPDT contacts, NEMA 3R case, 24-hour clock format, leap year correction, and daylight savings time adjustment. Intermatic ET1725CR or equivalent of Tork.

0-10V WALL BOX DIMMERS: Dimmers shall be slide type wall box dimmers with on/off operation, Lutron Nova T series or equivalent of Cooper, Lithonia, Wattstopper, or Leviton. See Electrical Symbols on E001 for additional information. Dimmer wiring shown on the Drawings is for information purposes only. The Contractor shall verify the dimmer wiring requirements with the dimmer manufacturer prior to start of work and install accordingly. Provide all wiring required to provide specified dimming and on/off operation.

## 2-09 SAFETY SWITCHES AND FUSES

SWITCHES: NEMA Standard HD, heavy-duty type, 3 pole, 480 or 240 volt, as indicated, with Class R fuse clips. Manufactured by Square D, General Electric, Siemens, or Eaton.

FUSES: Time delay type, UL Class RK5. Bussman Fusetrons, or approved equal of Chase-Shawmut or General Electric.

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NAMEPLATE: Provide engraved nameplate for each safety switch identifying load served, voltage, and fed-from identification. Example:

## AHU-1, 480-3-60 FED FROM HA-15

## 2-10 PANELBOARDS

STANDARDS: UL 67 and NEMA PB-1.

MANUFACTURERS: Square D, General Electric, Siemens, or Eaton.

CONSTRUCTION: Code gage cabinet with clamping trim cover and locking doors, keyed alike. Cabinets shall be minimum 20" wide with hinged trim (door-in-door). Busses shall be for bolt-in breakers with full sized neutral bus. Provide ground bus in each panelboard. Provide separate insulated ground bus where indicated on the drawings (Isolated Ground panelboards).

ENCLOSURE: Flush or surface mounted, NEMA 1, NEMA 3R, or NEMA 4X as indicated on drawings.

- 1) Front: Surface-mounted fronts, match box dimensions; Flush-mounted fronts, overlap box.
- 2) Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover. Provide typewritten circuit directory for each panel identifying load served and room location. Identify spares in pencil.
- 3) Panels and Trim Finishes: Galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two (2) coat, baked-on finish consisting of prime coat and thermosetting topcoat.
- 4) Hinged Trim (Door-In-Door).
- 5) Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.

CIRCUIT BREAKERS: Molded case bolt in type. Breakers shall be rated for the specified panelboard interrupting capacity rating in RMS symmetrical amperes. Two and three pole breakers shall have common internal trip. Branch mounted main breakers are not permitted unless specifically noted on the drawings.

CIRCUIT NUMBERING: Circuit numbering and breaker layout to match Contract Documents. Where circuit numbering is not permanently engraved, the manufacturer's plastic numbering strips shall be used. Paper numbers are not acceptable and may not be used.

BREAKER COORDINATION: Manufacturer shall provide coordination between feeder breakers and upstream devices. These coordination settings shall be made in the field by a manufacturer's field technician and documented. A letter confirming the setting and providing the setting information shall be provided prior to energization of the switchboard.

NAMEPLATE: Provide engraved nameplate for each panel identifying panel name, voltage, phase, and fed-from identification. Example:

PANEL HA 120 / 208V, 3PH FED FROM MDP

## 2-11 FLOOR BOXES (WHERE SPECIFIED):

ONE GANG BOXES (Cast Iron): Steel City 600 Series with 64 cu. in. capacity and aluminum trim ring. Floor plate assembly shall be P-60-GFCI for hard floors and P-60-CACP-GFCI for carpet.

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Provide adapter rings as required. Verify colors (brass or aluminum) with architect prior to ordering. Equivalent boxes and cover plates by Hubbell, FSR, or Wiremold.

- 1) 3/4" Conduit Tapping: Steel City 600-AL
- 2) 1" Conduit Tapping: Steel City 600-1-AL
- 3) 1 1/4" Conduit Tapping: Steel City 600-1 1/4-AL

MULTI-GANG BOXES (Cast Iron): Steel City 640 Series with 37 cu. in. capacity per gang and aluminum trim ring. Standard conduit tapping of 3/4", maximum conduit tapping of 1" with bushing and 1 1/4" without bushing. Floor plate assembly for each outlet shall be P-64-GFCI for hard floors and P-64-CACP-GFCI for carpet. Provide adapter rings/plates as required. Verify colors (brass or aluminum) with architect prior to ordering. Equivalent boxes and cover plates by Hubbell, FSR, or Wiremold.

2-Gang Floorbox: Steel City 642-AL
 3-Gang Floorbox: Steel City 643-AL
 4-Gang Floorbox: Steel City 644-AL

Each Communications gang must be capable of accepting a minimum of (4) Category 6 jacks.

POKE-THRU FLOOR OUTLETS: On above-grade floors with a shallow slab, poke-thru devices may be substituted if written permission is obtained from the Engineer and Architect, and provided each poke-thru is capable of accepting the specified number of receptacles plus a minimum of (4) Category 6 jacks. Wiremold RC4 Series, or equivalent, finish as selected by Architect.

## 2-12 CABLE MANAGEMENT

CABLE TRAYS: Cable trays shall be run above ceiling in corridors and attached and/or supported from wall per the manufacturer's requirements. Furnish and install 12" wide wire mesh type cable trays with 6" loading depth, as manufactured by Mono-Systems, B-Line Systems, Cablofil, MP husky, or Atlas. Trays shall be furnished in maximum lengths of 12 ft and shall have rounded edges and smooth surfaces. Trays shall be furnished with all fittings, spacers, and supports necessary for a complete system, and shall comply with NEMA Standard VE-1.

CABLE HOOKS: Cable hooks may be installed above ceiling in existing corridors where installation of cable tray is not practical and where the existing building was constructed prior to the adoption of the 2000 IBC by SC. Cable hooks shall be attached and/or supported from wall per the manufacturer's requirements. Space hooks per the manufacturer's recommendations, but no more than 36". Furnish & install two separate cable hook systems where indicated on the drawings. One row of 9" x 6" hooks for data cables and one row of 6" x 6" hooks for ETV and other cables. Hooks shall be aluminum with smooth ends free of sharp edges. Mono-Systems H-966-A and H-664-A hooks, or equivalent.

FIRE RATED WALL PENETRATIONS: Where cable trays and/or signal cables penetrate rated walls the Electrical Contractor shall furnish and install a UL Listed rated assembly, Specified Technology, Inc. (STI) EZ-Path Triple Cable Pathway System, or equivalent system by Legrand, Cooper, Metacaulk, 3M, or Hilti. See details on drawings.

## 2-13 NAMEPLATES AND WARNING SIGNS

NAMEPLATE: Provide engraved 3-ply laminated plastic nameplates for each panelboard, safety switch, enclosed circuit breaker, contactor, and lighting control panel. Attach to equipment cover using metal screws, rivets, or industrial epoxy cement. Manufacturer's sticky-back adhesive is not acceptable. Use 1/4" white letters on black field for normal power items. Use 1/4" white letters on red field for emergency power items.

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METAL-BACKED, BUTYRATE WARNING SIGNS: Weather-resistant, nonfading, preprinted, celluloseacetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 10 by 14 inches.

## 2-14 TELEPHONE AND COMPUTER SYSTEMS

Telephone and computer conduits, outlet boxes, cable tray, equipment mounting boards, grounding, and convenience outlets shall be provided as indicated on the drawings.

WIRING: Provide telephone and computer conduit with pull wires as indicated on the drawings.

## <u>2-15</u> TRANSFORMERS

MANUFACTURERS: Square D, General Electric, or Eaton. Dry type transformers manufactured per NEMA standard ST-20, UL 506, UL 1561, ANSI C57.12.91, and ANSI C89.2. <u>Transformers shall be compliant with DOE 2016 Efficiency requirements per EPAct 2015/10 CFR Part 431 standards, tested according to NEMA TP-2.</u>

DESIGN: 150°C rise maximum. 220°C insulation system.

TAPS: Four 2.5 per cent, 2 FCAN, 2 FCBN minimum. Adjust secondary taps in field as required to achieve desire voltage (120/208V, etc.).

NOISE: Sound level shall be tested and comply with ANSI C89.2.

ENCLOSURES: Indoor, ventilated type, unless otherwise noted. Mount transformers 6" off of wall per UL and manufacturer requirements.

PAD: Mount transformer on 6" concrete pad per manufacturer's recommendations. Pad shall extend 4" beyond transformer on all sides. Pad shall have 3/4" chamfer on all sides.

SEISMIC: Provide transformers that are constructed to withstand seismic forces specified in Section 260548 "Vibration and Seismic Controls for Electrical Systems." Fasten transformer to pad per the manufacturer's instructions, use vibration pads similar to Cooper Vibra Trol Series.

NAMEPLATE: Provide engraved nameplate for each transformer identifying transformer name, voltage, phase, and fed-from identification. Example:

## XFMR T-1 480V TO 208/120V, 3PH FED FROM MSB-14

## PART 3 - EXECUTION

#### 3-01 GENERAL REQUIREMENTS

WORKMANSHIP: All work shall be installed in a neat and orderly manner. Devices, cabinets, covers, fixtures, exposed raceways, etc., shall be aligned parallel or perpendicular to the building walls, ceiling, and floor. Wiring in panelboards and cabinets shall be neatly looped and laced, and not wadded. The Owner reserves the right to require repair or replacement of defective workmanship and material without additional compensation to the Contractor.

SUPPORTS: Conduits, boxes, cabinets, enclosures, lighting fixtures, etc., shall be securely supported by structural members or structural walls at intervals required by the NEC or as

recommended by the manufacturer. <u>Plaster, gypsum board, acoustical tile, and other ceiling and</u> wall finish materials shall not be used for support.

Recessed lighting fixtures and recessed ceiling speakers shall be independently supported by two (2) or four (4) #12 steel hanger wires. Hanger wires shall be hung within 10 degrees of plumb, and shall be securely tied to structural members such as steel joists or beams, or to steel angles or tubing which bridge structural members. All wiring located above fire rated assemblies must comply with 300.11 (A) 1 of the 2011 NEC.

CUTTING, PATCHING, AND PAINTING: The Electrical Contractor shall perform all boring, drilling, and cutting of walls, ceilings, and floors as required to install and support his raceways and equipment. Provide rough patching to seal penetrations through walls, ceilings, and floors. Finish patching and painting will be performed by the General Contractor.

FIRE WALL PENETRATIONS: Penetrations through fire rated walls and floors shall be sealed to maintain the integrity of the fire rating. Raceways through penetrations shall be in metal raceways. Penetration openings shall be sealed after the installation of the raceway with UL-49 listed fire retardant material, as manufactured by Chase Technology, 3M, Hilti, or approved equal. Penetrations shall be sealed in accordance with UL-49 requirements and the manufacturer's instructions. Coordinate manufacturer with the General Contractor so that all trades on the project use the same manufacturer.

Through penetrations of conduits and cables of fire resistance rated walls must comply with Section 714.3.1 of the IBC. Through penetrations of fire resistance ceiling assemblies must comply with section 714.4.1.1 of the IBC.

Where signal cables penetrate rated walls the Electrical Contractor shall furnish and install a UL Listed rated assembly, Specified Technology, Inc. (STI) EZ-Path Triple Cable Pathway System, or equivalent system by Wiremold or Cooper. See details on drawings.

ROOF PENETRATIONS: Do not penetrate roof or flashing unless permitted, in writing, by the Architect-Engineer.

TRENCHING AND BACKFILL: The Electrical Contractor shall perform all excavation, trenching, and backfilling necessary to install his work. Trenches shall be run after final grades are established, and shall be run at 24 inches minimum depth from finished grades. Contact all underground utilities (electric, telephone, cable TV, gas, water, sewer) and establish locations of underground utilities prior to digging. Damages to underground utilities will be repaired by the Owner of the line, and the Contractor responsible for such damage will pay all costs of repairs. After completion of backfilling operations, restore the disturbed areas to their original condition by leveling, raking, seeding and mulching.

## 3-02 GROUNDING

CODE: Entire system shall be grounded and bonded in accordance with the requirements of Article 250 of the National Electrical Code.

RECEPTACLES AND FIXTURES: Bond grounding terminal of each receptacle and fluorescent fixture to its outlet box with No. 12 green ground wire. Self-grounding receptacles are not acceptable as a substitute for this requirement.

## 3-03 RACEWAYS

WIRING: All wiring shall be installed in raceways, unless noted. Raceways shall be run concealed, unless noted.

## UNDERGROUND FEEDER CONDUIT, COMMUNICATIONS CONDUIT, AND DUCT BANKS:

- 1) Use GRC or PVC schedule 40 for underground conduit and duct bank installations.
- 2) Where required concrete encasement shall be either 2000 psi or 3000 psi.
- 3) Red colored concrete encasement, where required, shall use a red pigment integrally mixed into the concrete. Dry shake or broadcast coloring agents are not to be used.
- 4) For concrete encased conduits use manufactured PVC spacers and mounts for support and spacing of the conduits. Do not use concrete blocks, pipes, or other means to support and space conduits that are to receive concrete encasement.
- 5) A metallic backed marking tape shall be installed 12" above all underground feeder conduits, service entrance communications conduit, and duct banks.

#### FEEDERS:

- 1) Feeders shall be run in GRC or IMC where run exposed.
- 2) Feeders shall be run in GRC, IMC, or EMT where run concealed in walls or ceilings.
- 3) Feeders shall be run in GRC or Schedule 40 PVC encased in concrete with 2-inches minimum concrete encasement on all sides where run underground (Schedule 40 PVC is not required to be encased in conduit where run under the concrete floor slab).
- 4) Where PVC is used, elbows for turn-outs and risers shall be GRC, PVC is not permitted above grade. EXCEPTION: Plastic conduit may enter floor mounted switchboards, motor control centers, or other floor mounted enclosures.
- 5) Metal conduits installed in contact with earth shall be painted with 2 coats Rustoleum paint or other acceptable preservative.

## **BRANCH CIRCUITS:**

- 1) Branch circuits shall be run concealed where practical.
- 2) Branch circuits run concealed in walls or ceilings shall be run in EMT, GRC, or IMC.
- Branch circuits run exposed to weather on exterior walls or on roofs shall be run in GRC or IMC with screwed fittings.
- 4) Branch circuits run exposed in dry, finished spaces shall be run in Wiremold surface metal raceway.
- 5) Branch circuits run exposed in damp locations, unfinished spaces (attics), and unoccupied spaces (storage room, equipment rooms, janitor's closet) may be run in EMT in lieu of Wiremold
- 6) Branch circuits run underground shall be run in GRC, IMC, or Schedule 40 PVC plastic conduit.
- 7) All interior conduit homeruns to panelboards shall be run overhead in EMT, GRC, or IMC unless noted otherwise on the drawings.
- 8) Underground conduits shall be run 24" minimum below grade.
- 9) Metal conduits installed in contact with earth shall be painted with 2 coats Rustoleum paint or other acceptable preservative.
- 10) Where plastic conduits are indicated, transition from plastic to GRC or IMC below grade or slab and rise with GRC or IMC. PVC is not permitted above grade. EXCEPTION: Plastic conduit may enter floor mounted switchboards.

#### COMMUNICATIONS CONDUIT:

All conduit for Communications Systems within the building shall be run above grade in walls and above ceiling in metal raceways. Conduit shall be run concealed in all areas not designated as a utility or electrical room, except surface mounted raceway may be used where devices are installed on existing walls. Communications conduit wiring may not be run underground or in slab unless specifically noted otherwise on the drawings.

## FIRE ALARM SYSTEM CONDUIT:

- 1) All Fire Alarm System wiring within the building shall be run above grade in walls and above ceiling in metal raceways. Raceways shall be run concealed in all areas not designated as a utility or electrical room, except surface mounted raceway may be used where devices are installed on existing walls. Fire alarm wiring may not be run underground or in slab unless specifically noted otherwise on the drawings.
- 2) Conduit within the building used for Fire Alarm System wiring shall be red, similar to Allied Fire Alarm EMT, except where noted otherwise on the drawings. EXCEPTION: Fire Alarm System raceway run exposed in finished spaces shall be Wiremold V700 or equivalent.
- 3) Fire Alarm System wiring run underground between buildings shall be run in Schedule 40 PVC encased in concrete with 2-inches minimum concrete encasement on all sides (Schedule 40 PVC is not required to be encased in conduit where run under the concrete floor slab). PVC is not permitted above grade.

FLEXIBLE CONDUITS: Recessed fluorescent and incandescent fixtures located in accessible ceilings may be connected to an outlet box above the ceiling thru flexible conduit "whips". Run a separate ground wire in all conduit, including flexible fixture whips. DO NOT loop flexible conduit from one fixture to another. Metal-clad cable fixture whips shall be permitted for light fixture whips provided they do not exceed 6-feet in length and are provided by the light fixture manufacturer.

Final connections to motors, motor driven equipment, and vibrating equipment shall be made thru flexible conduit, 36" maximum length. "Sealtite" flexible metal conduit shall be installed outdoors, in equipment rooms, and in wet locations.

PULL WIRES: Raceways for wiring by others or for future shall contain a No. 14 galvanized steel pull wire or equivalent plastic cord with 200 lb. tensile strength.

INSTALLATION: Ream raceways, butt ends into couplings, 3 quarter bends per run maximum, plug raceways until wiring is pulled in place. Exposed conduits shall be run parallel and perpendicular to walls, floor, and ceiling. Multiple conduit runs shall be racked using Unistrut or Kindorf channels and pipe clamps. Install conduits in concrete slabs between the top and bottom layers of reinforcing steel. Maximum size of conduits in slabs is 1 inch. Crossing of conduits in slabs shall be avoided, if possible.

PULL BOXES: Maximum length between pull points shall be 200 ft. for pulls with two 90 degree bends, and 100 ft for pulls with three 90 degree bends. Furnish and install pullboxes, junction boxes, handholes, or conduit bodies where bends or pulling lengths exceed these specifications.

EXPANSION JOINTS: Furnish and install expansion joints where conduit crosses building expansion joints and for straight runs exceeding 100 ft. in length.

PLASTIC CONDUIT: Do not damage conduit while making field bends and offsets, cutting and joining conduit. Use GRC elbows where length between pulls exceeds 100 ft. Clean conduit prior to applying solvent. Insure that conduit extends fully into coupling or fitting when making joints.

MINIMUM SIZE: Home runs to panelboards shall be 3/4" minimum, otherwise raceways shall be 1/2" minimum, except that flexible conduit shall be 3/8" minimum.

FIRESTOPPING: Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.

TEST AND INSPECTIONS: After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

## 3-04 WIRE AND CABLE

MINIMUM SIZE: No. 12 for power circuits, No. 14 for control circuits, unless noted. Where home run exceeds 75 ft. length on 120 volt circuits, use No. 10 minimum.

COLOR CODE: No. 12 and No. 10 shall have color-coded insulation. No. 8 and larger shall be marked at all terminals and joints with color-coded tape. Color code as follows:

<u>Voltage</u>	Phase A	Phase B	Phase C	<u>Neutral</u>	Grounding
240/120	Black	Orange	Blue	White	Green
208/120	Black	Red	Blue	White	Green
480/277	Brown	Orange	Yellow	Gray	Green

INSTALLATION: Insure that raceway system is complete and that conductors will be free from moisture or physical damage prior to installing conductors. Install all conductors at the same time. Do not exceed cable manufacturer's recommended pulling tension for conductors. Where required, lubricate cables with Ideal Yellow 77, Burndy Slikon, or other acceptable cable lubricant. Do not use lubricants that are not acceptable to the Architect-Engineer.

SPLICING: Splices on Sizes No. 10 and smaller shall be made with wire nuts. Splices on Sizes No. 8 and larger shall be made with split bolt connectors, compression connectors, or solderless lugs. Splices shall be insulated with two or more layers of Scotch 23 rubber tape covered with two or more layers of Scotch 33 plastic tape, or acceptable equivalent method.

MULTIWIRE BRANCH CIRCUITS: Shared or common neutrals are not permitted on this project for multiwire branch circuits. The Contractor shall pull a separate neutral for all 120V & 277V circuits.

## 3-05 BOXES

WALL OUTLETS: Flush mounted, unless noted. Boxes shall be securely mounted to wall studs or be grouted in masonry. Boxes shall have single or multi-gang plaster rings, as required. "Throughwall" boxes <u>SHALL NOT BE USED</u>. Back-to-back mounting of boxes is not permitted. Boxes on opposite sides of a rated wall shall have a minimum of 24" horizontal spacing or shall be protected with listed putty pads. Locate boxes so that cover or plate will not span different building finishes.

RECESSED BOXES IN MASONRY WALLS: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between the box and cover plate or the supported equipment and box.

RECESSED BOXES IN STUD WALLS: Support boxes from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

CEILING OUTLETS: Flush mounted or concealed above ceiling. Boxes for fixture support shall have studs or ears as required and shall be securely supported by adjustable bar hangers or steel angle.

JUNCTION BOXES, PULL BOXES, AND WIREWAYS: Shall be sized and installed as indicated on the drawings or where required by NEC for pulling or splicing wiring. All junction boxes and pull boxes shall be accessible. Junction boxes and pull boxes shall not be located above inaccessible ceilings.

LOCATIONS: Verify door swings and mount switches on strike side, 6" from jamb. Verify counter heights and arrangement prior to setting boxes. The Owner reserves the right to move any outlet by as much as 10 ft. from its indicated location at no additional cost, provided the Contractor is notified prior to roughing in.

## 3-06 WIRING DEVICES

INSTALLATION: Devices shall be installed as indicated on the drawings and wired in accordance with the manufacturer's instructions.

MASKING: Devices shall be masked to prevent painting of faces and handles during construction. Do not install cover plates until clean up has been completed.

COVER PLATES: Cover plates shall be installed on all wiring devices, telephone and computer outlets, junction boxes, and outlet connections.

## 3-07 INTERIOR LIGHTING

LOCATION: Install fixtures symmetrically on ceiling or ceiling grid as indicated on the drawings and as directed on the job.

MOUNTING: Support all fixtures securely from structural or framing members with adjustable bars, metal angles, threaded rods or other acceptable methods. Installation shall comply with NEC 314.27. Support recessed fixtures as specified in paragraph 3-01.

Suspended linear fluorescent direct/indirect fixtures in classrooms, offices, conference rooms, and other finished interior spaces shall be suspended using aircraft cable as indicated on the drawings, unless noted otherwise.

Suspended industrial fixtures, high-bay fixtures, low-bay fixtures, etc. located in gymnasiums, warehouses, industrial facilities, and other larger spaces with exposed ceilings shall be suspended using threaded rods and the Electrical Contractor shall furnish and install unistrut or other structural member as required to support fixtures. Mount so bottom of fixture is as close to bottom of beam or truss as possible, unless noted otherwise.

## 3-08 TELEPHONE AND COMPUTER SYSTEMS

REQUIREMENTS: Verify telephone and computer equipment space requirements and outlet locations with Owner prior to roughing in. Telephone and computer service conduits, equipment mounting boards, grounding, and convenience outlets shall be provided as indicated on the drawings.

WIRING: Provide telephone and computer conduit stubups into space above the ceiling. Minimum size conduit is 1".

## 3-09 LIGHTING CONTROLS

QUALITY CONTROL: Verify operation of each lighting control device, and adjust time delay and sensitivity settings. Lighting control devices that fail tests and inspections are defective work. See details and notes on drawings for additional information.

ADJUSTING: When requested within 12 months of date of Substantial Completion, provide onsite assistance in adjusting sensors to suit occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose. See details and notes on drawings for additional information.

DEMONSTRATION: Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lighting control devices.

## 3-10 SAFETY SWITCHES

LOCATION: Mount switches where shown on drawings and within sight of equipment served. Mount in a readily accessible location unless noted. Verify fuse sizes with equipment manufacturer's requirements.

#### 3-11 PANELBOARDS

INSTALLATION: Mount panelboards so that the center grip of the operating handle of the highest circuit breaker in the panelboard is not more than 6'-7" (2.0 meters) above the floor when in its highest position per the requirements of NEC 240.24(A). Bottom of panelboard to be a minimum of 12" above the floor except where a lower height is required to comply with NEC 240.24(A). Connect circuits as indicated on the drawings, observing correct color code and numbering. Mark all wires in panelboard with circuit number.

DIRECTORY: <u>Provide typewritten circuit directory for each panel identifying load served and room location.</u> Identify spares in pencil. Panelboard schedules must comply with NEC 408.4, including listing room description and room number for each load. Turn all spare breakers off.

<u>ARC-FLASH HAZARD WARNING LABELS:</u> Provide warning labels for all panels, switchboards, switchgear, and industrial control panels per the requirements of NEC 110.16. Labels to read,

# DANGER ARC FLASH & SHOCK HAZARD APPROPRIATE PERSONAL PROTECTION EQUIPMENT REQUIRED

## 3-12 TRANSFORMERS

PAD: Mount transformer on 6" concrete pad per manufacturer's recommendations. Pad shall extend 4" beyond transformer on all sides. Pad shall have 3/4" chamfer on all sides. Fasten transformer to pad per the manufacturer's instructions, use vibration pads similar to Cooper Vibra Trol Series.

PROTECTION: Protect transformer and all components from weather during construction period.

TRANSFORMER: Install and level transformer per manufacturer's instructions.

TAPS: Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 5 percent and not being lower than nameplate voltage minus 2 percent at maximum load conditions. Submit recording and tap settings as test results.

## 3-13 NAMEPLATES AND WARNING SIGNS

INSTALLATION: Verify identity of each item before installing identification products. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

## 3-14 TELEPHONE AND COMPUTER SYSTEMS

REQUIREMENTS: Verify telephone and computer equipment space requirements and outlet locations with Owner prior to roughing in. Telephone and computer service conduits, equipment mounting boards, grounding, and convenience outlets shall be provided as indicated on the drawings.

## 3-15 COMPLETION OF WORK

TESTS AND FINAL REVIEW: Upon completion of work, the entire system shall be completely operational and tested to conform with these specifications and drawings, and shall be reviewed by the Architect-Engineer. All defects in workmanship and material shall be immediately corrected without additional compensation to the Contractor.

The final review of the electrical installation by the Engineer cannot be provided until the following items have been submitted to the Engineer for review:

- 1) Letter from the Electrical Contractor on company letterhead indicating that the installation is complete and ready for a final review.
- 2) Written documentation that the Lighting Control System and Occupancy Sensor Commissioning has been provided in accordance with the design documents.
- 3) Written confirmation that the Lighting Control System and the Occupancy Sensor Training has been provided or at a minimum has been scheduled in accordance with the design documents.
- 4) Breaker Coordination letter confirming the setting and providing the setting information of circuit breakers in accordance with the design documents.
- 5) Signed and dated certificate indicating that the specified functional tests of the Fire Alarm System have been performed.

Failure to submit the above documentation prior to requesting the Engineer's Final Review of the project may result in delays in providing the final review. The Engineer assumes no liability for delays in the project resulting from failure to provide the proper documentation.

The system will not be considered complete until Record Documents are provided and training of facility personnel on the system operation is complete. This facet of the services to be provided by the Contractor is deemed very important to the satisfactory completion of the contract and the installation cannot be deemed complete until these services have been provided in accordance with the Contract Documents.

CLEAN UP: Upon completion of all installations and prior to final acceptance by the Owner, remove all debris from the site. Clean and touch up paint on fixture lenses and trims, cabinets, enclosures, cover plates, etc.

END OF SECTION 260500

## PART 1 - GENERAL REQUIREMENTS

## <u>1-01</u> <u>SUMMARY</u>

Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

## 1-02 ELECTRICAL SUBMITTALS

Electrical shop drawings shall be submitted in one complete package containing all items required by this specification and all other Division 26-28 specifications. Partial shop drawing submittals may be rejected by the Architect-Engineer.

Exceptions: Lighting Control System CAD drawings, and Allowanced Light Fixtures may be submitted separately if additional time is needed to prepare these shop drawings. Submit written request to Architect/Engineer for extension with a timeline schedule indicating submittal date for items to be submitted separately.

## 1-03 ELECTRICAL SUBMITTAL FORMAT

FILE TYPE: Electrical submittals to be submitted digitally and shall be searchable pdf documents divided into categories as indicated below.

SUBMITTAL TRANSMITTAL LETTER: The submittal package shall include a single transmittal letter saved as a separate pdf file indicating the following:

- The project name and address
- The date of submission
- The Electrical Contractor name and address
- The General Contractor name and address
- The Construction Manager name and address (if applicable)
- A list of each submittals category (use categories listed below)
- Any applicable remarks and/or comments
- Signature of transmitter

SUBMITTAL CATEGORY COVER SHEET: The digital submittal shall be divided into submittal categories as indicated below. <u>Each submittal category shall be saved as a separate pdf file with a cover sheet indicating the following:</u>

- The project name
- The submittal category (category names to match those listed below where applicable)
- The date of submission
- The Electrical Contractor name and address
- The name and address of the firm or entity that prepared the submittal.
- Any applicable remarks and/or comments

Submittals not meeting the above criteria may be rejected.

Refer to the sample Category Cover Sheet at the end of this specification section.

ELECTRICAL SUBMITTAL CATEGORIES: Within 45 days after award of contract and before any materials are delivered to the site, submit a digital set of Electrical Submittals in pdf format to the Architect-Engineer on each of the following categories/materials:

**ELECTRICAL SUBMITTALS** 

- 1) Section 260500, 2-01: Submit an electrical room layout drawing for each electrical room reflecting dimensions of actual equipment provided. Provide clearances per Table 110.26(a)(1) of the NEC.
- 2) Section 260500, 2-02: Grounding and Test Method/Equipment.
- 3) Section 260500, 2-03: Raceways and Fittings.
- 4) Section 260500, 2-04: Wire and Cable.
- 5) Section 260500, 2-05: Boxes and Wireways.
- 6) Section 260500, 2-06: Wiring Devices.
- 7) Section 260500, 2-07 & 2-08: Lighting Fixtures and Controls (Including Cut sheets, Drawings, Lamps, Ballasts, and Drivers).
- 8) Section 260500, 2-09: Safety Switches.
- 9) Section 260500, 2-10: Switchgear (Disconnect Switches, Panelboards, and Transformers).
- 10) Section 260500, 2-11: Floor Boxes.
- 11) Section 260500, 2-12: Cable Management (Cable J-Hooks, Fire Wall Penetration Assembly).
- 12) Section 260500, 2-13: Nameplates.
- 13) Section 260500, 2-15: Transformers
- 14) Section 260529: Hangers and Supports for Electrical Systems (Including Engineer's calculations where required).
- 15) Section 260548: Vibration and Seismic Controls for Electrical Systems.
- 16) Section 283100: Fire Alarm Equipment for new work.

OPTIONAL FEATURES: Clearly identify options requiring selection by Architect/Engineer.

RESUBMITTALS: Make resubmittals in same format as initial submittal. Note date and content of previous submittal. Note date and content of revision in label or title block and clearly indicate extent of revision.

DISTRIBUTION: Furnish copies of final reviewed submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms where applicable.

USE FOR CONSTRUCTION: Retain complete copies of submittals on Project site (either a digital copy or a hard copy is acceptable provided it is readily accessible). Use only final action submittals that are marked as such from the Engineer's action stamp.

## 1-04 ELECTRICAL SUBMITTAL SCHEDULE

SCHEDULE: Within 45 days after award of contract and before any materials are delivered to the site, submit a digital set of Electrical Submittals in pdf format to the Architect-Engineer. If additional time is needed, submit a written request to Architect/Engineer for extension with a timeline schedule indicating revised submittal date.

No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

No extension of the Contract Time will be authorized because of failure to transmit submittals in the proper format.

#### 1-05 ELECTRICAL SUBMITTAL REJECTION

Failure to comply with the above criteria may result in rejection of the submittal by the Architect-Engineer. Refer to Division 1 for additional Submittal requirements.

## PART 2 - NOT APPLICABLE

## PART 3 - EXECUTION

## 3-01 CONTRACTOR'S ACTIONS

GENERAL: The primary purpose of submitting electrical shop drawings is to demonstrate the way by which the Contractor proposes to comply with the design concept expressed in the Contract Documents for the portions of work that require submittals.

CONTRACTOR REVIEW: Prior to submittal to the Engineer, the Contractor shall review shop drawings for compliance with the Contract Documents.

No electrical equipment or materials shall be ordered or installed by the Contractor prior to receipt of properly reviewed shop drawings. The Contractor may not perform any portion of the work for which the Contract Documents require submittal and review of shop drawings prior to receipt of properly reviewed shop drawings.

Failure to comply with the above criteria may require the removal by the Contractor of any equipment or materials installed prior to receipt of properly reviewed electrical shop drawings, at no cost to the Owner or the Architect/Engineer.

## 3-02 ENGINEER'S ACTIONS

GENERAL: Engineer will not review submittals that do not bear Contractor's approval/acceptance stamp and will return them without action.

ELECTRICAL SUBMITTALS: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate actions required.

INCOMPLETE OR PARTIAL SUBMITTALS: Incomplete or partial submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 260510

**ELECTRICAL SUBMITTALS** 

## **ELECTRICAL SUBMITTAL CATEGORY COVER SHEET**

PROJECT NAME: Sample Project Middle School

Section 260500, 2-05 & 2-06 - Lighting Fixtures (Including Lamps and SUBMITTAL CATEGORY:

Ballasts)

DATE OF SUBMISSION: May 01, 2017

ELECTRICAL CONTRACTOR: ABCD Electrical Contractor, 123 Main Street, Anywhere, SC 29999

SUBMITTAL PREPARER: WXYZ Lighting, Inc. 456 Elm Street Somewhere, SC 21111

REMARKS/COMMENTS: Color selections needed for types C1 and W4 fixtures.

## PART 1 - GENERAL REQUIREMENTS

## 1-01 SUMMARY

#### SECTION INCLUDES:

- 1) Hangers and supports for electrical equipment and systems.
- 2) Construction requirements for concrete bases.

## 1-02 PERFORMANCE REQUIREMENTS

- 1) Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- 2) Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- 3) Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- 4) Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

## 1-03 SUBMITTALS

- 1) Product Data: For steel slotted support systems.
- 2) Shop Drawings: Shop Drawings shall show fabrication and installation details and include calculations for the following:
  - a. Trapeze hangers. Include Product Data for components.
  - b. Steel slotted channel systems. Include Product Data for components.
  - c. Equipment supports.
- Welding Certificates.

## 1-04 QUALITY ASSURANCE

- 1) Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code Steel."
- 2) Comply with NFPA 70.

## PART 2 - PRODUCTS

## 2-01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- 1) Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
  - a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - i. Allied Tube & Conduit.
    - ii. Cooper B-Line, Inc.; a division of Cooper Industries.
    - iii. ERICO International Corporation.

- iv. GS Metals Corp.
- v. Thomas & Betts Corporation.
- vi. Unistrut; Tyco International, Ltd.
- vii. Wesanco, Inc.
- c. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- d. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
- e. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
- f. Channel Dimensions: Selected for applicable load criteria.
- 2) Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- 3) Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- 4) Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- 5) Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- 6) Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - a. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - i. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - ii. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - Hilti Inc.
      - ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - MKT Fastening, LLC.
      - Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
  - b. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - i. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - ii. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - Cooper B-Line, Inc.; a division of Cooper Industries.
      - Empire Tool and Manufacturing Co., Inc.
      - Hilti Inc.
      - ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - MKT Fastening, LLC.
  - c. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  - d. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  - e. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  - f. Toggle Bolts: All-steel springhead type.

g. Hanger Rods: Threaded steel.

## 2-02 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- 1) Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- 2) Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

## PART 3 - EXECUTION

## 3-01 APPLICATION

- 1) Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- 3) Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - a. Secure raceways and cables to these supports with two-bolt conduit clamps.
- 4) Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

## 3-02 SUPPORT INSTALLATION

- Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- 2) Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- 3) Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- 4) Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - a. To Wood: Fasten with lag screws or through bolts.
  - b. To New Concrete: Bolt to concrete inserts.
  - c. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - d. To Existing Concrete: Expansion anchor fasteners.
  - e. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
  - f. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts; beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69; or spring-tension clamps.
  - g. To Light Steel: Sheet metal screws.
  - h. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes,

- i. transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

## 3-03 INSTALLATION OF FABRICATED METAL SUPPORTS

- 1) Comply with installation requirements in Division 05 Section "Metal Fabrications" for site-fabricated metal supports.
- 2) Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- 3) Field Welding: Comply with AWS D1.1/D1.1M.

## 3-04 CONCRETE BASES

- Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- 2) Use 3000-psi, 28-day compressive-strength concrete.
- 3) Anchor equipment to concrete base.
  - a. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - b. Install anchor bolts to elevations required for proper attachment to supported equipment.
  - c. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

## 3-05 PAINTING

- 1) Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- 2) Touchup: Comply with requirements in Division 09 for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- 3) Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

**END OF SECTION 260529** 

## PART 1 - GENERAL REQUIREMENTS

#### 1-01 SUMMARY

#### SECTION INCLUDES:

- 1) Isolation pads.
- 2) Spring isolators.
- 3) Restrained spring isolators.
- 4) Channel support systems.
- 5) Restraint cables.
- 6) Hanger rod stiffeners.
- 7) Anchorage bushings and washers.

## 1-02 PERFORMANCE REQUIREMENTS

- 1) Seismic-Restraint Loading:
  - a. Site Class as Defined in the IBC: D (unless otherwise directed by Architect)
  - b. Assigned Seismic Use Group or Building Category as Defined in the IBC: I
    - i. Component Importance Factor: 1.0, Life Safety equipment: 1.5.
    - ii. Component Response Modification Factor: As defined in the IBC and ASCE 7.
    - iii. Component Amplification Factor: 2.5
  - c. Design Spectral Response Acceleration at Short Periods (0.2 Second) and Design Spectral Response Acceleration at 1.0-Second Period: As directed by the Structural Engineer of Record for project.
- 2) Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- 3) Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- 4) Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

## 1-03 ACTION SUBMITTALS

- 1) Product Data: For the following:
  - Include rated load, rated deflection, and overload capacity for each vibration isolation device.
  - b. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of seismic-restraint component used.
    - i. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an agency acceptable to authorities having jurisdiction.
    - ii. Annotate to indicate application of each product submitted and compliance with requirements.
  - c. Restrained-Isolation Devices: Include ratings for horizontal, vertical, and combined loads.
- 2) Delegated-Design Submittal: For vibration isolation and seismic-restraint details indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

- a. Design Calculations: Calculate static and dynamic loading due to equipment weight and operation, seismic forces required to select vibration isolators and seismic restraints.
  - Coordinate design calculations with wind-load calculations required for equipment mounted outdoors. Comply with requirements in other electrical Sections for equipment mounted outdoors.
- b. Indicate materials and dimensions and identify hardware, including attachment and anchorage devices.
- c. Field-fabricated supports.
- d. Seismic-Restraint Details:
  - Design Analysis: To support selection and arrangement of seismic restraints. Include calculations of combined tensile and shear loads.
  - ii. Details: Indicate fabrication and arrangement. Detail attachments of restraints to the restrained items and to the structure. Show attachment locations, methods, and spacings. Identify components, list their strengths, and indicate directions and values of forces transmitted to the structure during seismic events.

## 1-04 INFORMATIONAL SUBMITTALS

- 1) Welding certificates.
- 2) Field quality-control test reports.

## 1-05 QUALITY ASSURANCE

- Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- 2) Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code Steel."
- 3) Seismic-restraint devices shall have horizontal and vertical load testing and analysis and shall bear anchorage preapproval OPA number from OSHPD, preapproval by ICC-ES, or preapproval by another agency acceptable to authorities having jurisdiction, showing maximum seismic-restraint ratings. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) to support seismic-restraint designs must be signed and sealed by a qualified professional engineer.
- 4) Comply with NFPA 70.

## PART 2 - PRODUCTS

## 2-01 VIBRATION ISOLATORS

- 1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Ace Mountings Co., Inc.
  - b. Amber/Booth Company, Inc.
  - c. California Dynamics Corporation.
  - d. Isolation Technology, Inc.
  - e. Kinetics Noise Control.
  - f. Mason Industries.
  - g. Vibration Eliminator Co., Inc.
  - h. Vibration Isolation.
  - i. Vibration Mountings & Controls, Inc.
- 2) Pads: Arrange in single or multiple layers of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern and galvanized-steel baseplates, and factory cut to sizes that match requirements of supported equipment.

- 3) Spring Isolators: Freestanding, laterally stable, open-spring isolators.
  - a. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
  - b. Minimum Additional Travel: 50 percent of the required deflection at rated load.
  - c. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
  - d. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
  - e. Baseplates: Factory drilled for bolting to structure and bonded to 1/4-inch- (6-mm-) thick, rubber isolator pad attached to baseplate underside. Baseplates shall limit floor load to 500 psig (3447 kPa).
  - f. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.
- 4) Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic or limitstop restraint.
  - a. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to weight being removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, neoprene or rubber isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
  - b. Restraint: Seismic or limit-stop as required for equipment and authorities having jurisdiction.
  - c. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
  - d. Minimum Additional Travel: 50 percent of the required deflection at rated load.
  - e. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
  - f. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

## 2-02 SEISMIC-RESTRAINT DEVICES

- 1) Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Amber/Booth Company, Inc.
  - b. California Dynamics Corporation.
  - c. Cooper B-Line, Inc.; a division of Cooper Industries.
  - d. Hilti Inc.
  - e. Loos & Co.; Seismic Earthquake Division.
  - f. Mason Industries.
  - g. TOLCO Incorporated; a brand of NIBCO INC.
  - h. Unistrut; Tyco International, Ltd.
- 2) General Requirements for Restraint Components: Rated strengths, features, and application requirements shall be as defined in reports by an evaluation service member of ICC-ES.
- 3) Channel Support System: MFMA-3, shop- or field-fabricated support assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; and rated in tension, compression, and torsion forces.
- 4) Restraint Cables: ASTM A 603 galvanized-steel or ASTM A 492 stainless-steel cables with end connections made of steel assemblies with thimbles, brackets, swivels, and bolts designed for restraining cable service; and with a minimum of two clamping bolts for cable engagement.
- 5) Hanger Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections of reinforcing steel angle clamped to hanger rod. Do not weld stiffeners to rods.

- 6) Bushings for Floor-Mounted Equipment Anchor: Neoprene bushings designed for rigid equipment mountings, and matched to type and size of anchors and studs.
- 7) Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings, and matched to type and size of attachment devices.
- 8) Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.
- 9) Mechanical Anchor: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchors with strength required for anchor and as tested according to ASTM E 488. Minimum length of eight times diameter.
- 10) Adhesive Anchor: Drilled-in and capsule anchor system containing polyvinyl or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

## PART 3 - EXECUTION

## 3-01 APPLICATIONS

- 1) Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by an evaluation service member of ICC-ES or other agency acceptable to authorities having jurisdiction.
- 2) Hanger Rod Stiffeners: Install hanger rod stiffeners where indicated or scheduled on Drawings to receive them and where required to prevent buckling of hanger rods due to seismic forces.
- 3) Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits.

## 3-02 SEISMIC-RESTRAINT DEVICE INSTALLATION

- 1) Equipment and Hanger Restraints:
  - a. Install restrained isolators on electrical equipment.
  - b. Install resilient, bolt-isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch (3.2 mm).
  - c. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES or an agency acceptable to authorities having jurisdiction providing required submittals for component.
- 2) Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall
- 3) Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- 4) Drilled-in Anchors:
  - a. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
  - b. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.

- c. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
- d. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
- e. Set anchors to manufacturer's recommended torque, using a torque wrench.
- f. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

## 3-03 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

1) Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where they terminate with connection to equipment that is anchored to a different structural element from the one supporting them as they approach equipment.

## 3-04 FIELD QUALITY CONTROL

- 1) Tests and Inspections:
  - a. Obtain Architect's approval before transmitting test loads to structure. Provide temporary load-spreading members.
  - b. Test at least four of each type and size of installed anchors and fasteners selected by Architect.
  - c. Test to 90 percent of rated proof load of device.
  - d. Measure isolator restraint clearance.
  - e. Measure isolator deflection.
  - f. Verify snubber minimum clearances.
  - g. If a device fails test, modify all installations of same type and retest until satisfactory results are achieved.
- 2) Remove and replace malfunctioning units and retest as specified above.
- 3) Prepare test and inspection reports.

## 3-05 ADJUSTING

- 1) Adjust isolators after isolated equipment is at operating weight.
- 2) Adjust limit stops on restrained spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation.
- 3) Adjust active height of spring isolators.
- 4) Adjust restraints to permit free movement of equipment within normal mode of operation.

**END OF SECTION 260548** 

FIRE ALARM SYSTEM

#### 1-01 GENERAL SYSTEM REQUIREMENTS:

CODE COMPLIANCE: The complete installation is to conform to Local Code Requirements and to the requirements of the AHJ enforced editions of the following publications including amendments:

- a) NFPA 13: Standard for the installation of sprinkler systems (applicable sections)
- b) NFPA 70: National Electrical Code (with particular attention to ARTICLE 760)
- c) NFPA 72: National Fire Alarm Code
- d) NFPA 101: Life Safety Code
- e) IBC: International Building Code
- f) Americans With Disabilities Act Guidelines

UNDERWRITERS LABORATORIES: Each and all items of the Fire Alarm System shall be listed as a product of a SINGLE Fire Alarm System manufacturer under the appropriate category by Underwriters' Laboratories, Inc. (UL), and shall bear the "UL" label. All control equipment is to be listed under UL category UOJZ as a single control unit. Partial listing shall NOT be acceptable. The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994. Visual signaling appliances shall be listed under UL 1971.

## 1-02 DESCRIPTION OF WORK:

The work includes the installation of new fire alarm circuits and devices associated with the existing building interior renovations. New fire alarm equipment, components, relays and alarm system shall match the existing system and programming. Equipment, materials, installation, workmanship, review, and testing shall be in strict accordance with the required and advisory provisions of "NFPA 72: National Fire Alarm Code". Devices and equipment for fire alarm service shall be listed by Underwriters Laboratories Inc. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.

WARRANTY: All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal bid. The Contractor shall repair or replace any deficiencies reported in the guarantee period promptly after notification, without any additional compensation from the Owner.

## BASIC PERFORMANCE:

- Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Class B Signaling Line Circuits (SLC).
- b. Initiation Device Circuits (IDC) shall be wired Class B as part of an addressable device connected by the SLC Circuit.
- Notification Appliance Circuits (NAC) shall be wired Class B as part of an addressable device connected by the SLC Circuit.
- d. Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.
- e. All panels and peripheral devices shall be the standard product of a single manufacturer and shall display the manufacturer's name on each component.

BASIC SYSTEM FUNCTIONAL OPERATION: When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:

- a. The system alarm LED on the system display shall flash.
- b. A local piezo electric signal in the control panel shall sound.
- c. A backlit LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
- d. Printing and history storage equipment shall log the information associated each new fire alarm control panel condition, along with time and date of occurrence.
- e. All system output programs assigned via control-by-event interlock programming to be activated by the particular point in alarm shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated.

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FIRE ALARM SYSTEM

SURGE PROTECTIVE DEVICE (SPD): All exterior fire alarm circuits. Surge protector shall be DiTek DTK-MRJ31XSCP-RUV, or approved equivalent of Innovative Technology, EPT, MCG Electronics, or APC. Unit shall be listed per UL 497A, rated for 130 volts, 9000 amps, 76 joules, with a 5 nanosecond response time. Unit shall be provided with RJ45 modular plugs.

1-03 SUBMITTALS: Prior to ordering any equipment or devices:

Submit Manufacturer's Data for all equipment, device and wiring: for approval.

INPUT OUTPUT MATRIX: Provide descriptions of all system operations.

SHOP DRAWINGS: Fire Alarm Shop Drawings shall comply with the requirements of Chapter 9 of the International Fire Code. Provide drawings that clearly and completely indicate the function of the control panel and devices connected thereto. Indicate termination points of devices and indicate the interconnection of modules required for proper operation of the system and connections to other systems including HVAC systems and fire protection systems. Provide battery calculations and voltage drop calculations of notification circuits.

#### 1-04 RECORD DRAWINGS:

Redline construction drawings with all changes made during construction and submit to engineer. Provide updated shop drawings to reflect changes made during construction and provide hard copies and electronic files to the Owner.

## PART 2 - PRODUCTS

- <u>2-01</u> BATTERIES (FOR EXISTING AND NEW DEVICES): The battery shall have sufficient capacity to power the fire alarm system for not less than twenty-four hours plus 5 minutes of alarm upon a normal AC power failure. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required. If necessary to meet standby requirements, external battery and charger systems may be used.
- 2-02 MAIN FIRE ALARM CONTROL PANEL, POWER EXTENDERS, AND EQUIPMENT: Fire alarm equipment shall be as manufactured by Edwards System Technology (EST) and be compatible with the existing building Fire Alarm System. Panel and equipment shall be capable of performing all functions for which it is intended herein and on the drawings.

## 2-03 NOTIFICATION APPLIANCES

SYNCHRONIZED STROBE AUDIO/VISUAL AND VISUAL ALARMS: UL Listed to Standard 1971 and tested for 75 candela on-axis. Semi-flush mounted combination horn-lamp assembly suitable for use on an electrically supervised circuit. Horn shall be electronic type with a 3-pulse temporal audible signal and shall have a sound rating of 88db at 10 ft, and shall include a minimum of three settings (high/medium/low). All horns in corridors and in spaces larger than 2,000sf shall be set to "high". All other horns shall be set to "low". Lamps shall be synchronized flashing Xenon type with field selectable 15/30/75/110 candela effective intensity and a flash rate of 1 Hz, and shall be protected by a clear plastic lens. Device housings shall be white Provide flush-mount backboxes as required. Strobe setting shall be indicated on the drawings.

#### 2-04 INITIATING DEVICES

INTELLIGENT MANUAL STATIONS: Pull stations shall be dual action. The front of the station is to be hinged to a backplate assembly and must be opened with a key to reset the station.

INTELLIGENT PHOTOELECTRIC SMOKE DETECTORS: UL 268. Low profile type detectors shall be plug-in units that mount to a twist-lock base. A detector disconnected from the based shall indicate a "Trouble" condition. Detector shall utilize an LED that blinks when device is polled and glows steady when device is in alarm.

INTELLIGENT MODULES: Monitoring and Control modules must be listed for installation with specified control panel and must be capable of providing the function for which it is intended.

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FIRE ALARM SYSTEM

<u>VIRE</u>: Furnish and install in accordance with NFPA 70 and NFPA 72. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Conductors for 120-volt circuits shall be No. 12 AWG minimum. Number and size of conductors shall be as recommended by the fire alarm system manufacturer.

#### 2-06 RACEWAYS

Galvanized rigid conduit (GRC) or Intermediate grade metallic conduit (IMC) with screwed fittings, or Electrical metallic tubing (EMT) with compression type fittings or all-steel set screw fittings. See Section 260500, Basic Materials and Methods.

All circuits shall be in metal conduit, unless noted otherwise. All raceways shall be run concealed in walls or ceilings in EMT, GRC, or IMC, unless noted otherwise. Where surface raceway is required and is approved in writing by the Architect and the Owner, use Wiremold ivory surface metal raceway with red surface metal boxes compatible with fire alarm devices, except that EMT with steel boxes may be used in storage rooms, etc. requiring surface raceway. No high voltage wiring will be permitted in the same raceway or electrical box with any wiring of the fire alarm system except where there is a direct interface such as programmable relay controlling an external device. Where this occurs, the box must be clearly marked to indicate the presence of high voltage.

All wiring shall be run in EMT, GRC, or IMC conduit. All junction box covers shall be spray painted red and labeled "Fire Alarm". Conduit used for Fire Alarm System wiring shall be red, similar to Allied Fire Alarm EMT. Conductors shall be color coded as follows:

## **PART 3 - INSTALLATION**

#### 3-01 WORKMANSHIP

All work shall be installed in a neat and orderly manner. Devices, cabinets, covers, fixtures, exposed raceways, etc., shall be aligned parallel or perpendicular to the building walls, ceiling and floor. Plaster, gypsum board, acoustical tile, and other ceiling and wall finish material shall not be used for support.

#### 3-02 MANUFACTURER'S REPRESENTATIVE

The services of a qualified manufacturer's representative or technician, experienced in the installation, operation, testing, and servicing of the type of system being installed, shall supervise the installation, connecting, software documentation, testing, and adjusting of the system, and train the Owner's personnel in operation of the system. Certified test reports of the final satisfactory test shall be submitted to the Architect-Engineer. Upon completion of work, the entire system shall be completely operational and tested for conformance with these specifications and drawings, and reviewed by the Architect-Engineer. Test shall be performed in accordance with the fire alarm system manufacturer's instructions and per NFPA 72 requirements. All defects in workmanship and material shall be immediately corrected without additional compensation to the Contractor.

RECORD OF COMPLETION: Complete and submit the NFPA-72 Record of Completion form.

## 3-03 INSTRUCTION

Instruction shall be provided to the owner as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

#### 3-04 CLEAN-UP

Upon completion of all installations and prior to final acceptance by the Owner, all debris shall be removed from the site. Cabinets, enclosures, cover plates, etc., shall be cleaned and paint touched up.

END OF SECTION 283100

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