Project Manual for

University of South Carolina
DM12 Humanities CR Elevators/Machine Room
Columbia, South Carolina

The Boudreaux Group, Inc.
Post Office Box 5695
Columbia, South Carolina 29250

State Permanent Improvement Project No. H27-6100

Architect's Project No. U-787-14-3

Construction Documents

VOLUME I OF I

April 30, 2015

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PROJECT NAME: USC DM12 Humanities CR Elevator/Machine Room

PROJECT NUMBER: H27-6100

TECHNICAL SPECIFICATIONS

SE-310
INVITATION FOR CONSTRUCTION SERVICES

PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room

PROJECT NUMBER: H27-6100

PROJECT LOCATION: Columbia, South Carolina

BID SECURITY REQUIRED? Yes ☒ No ☐

PERFORMANCE BOND REQUIRED? Yes ☒ No ☐

PAYMENT BOND REQUIRED? Yes ☒ No ☐

NOTE: Contractor may be subject to a performance appraisal at the close of the project.

CONSTRUCTION COST RANGE: $ 235,000

DESCRIPTION OF PROJECT: Alteration of two (2) geared elevators and construction of rated, conditioned machine room enclosure. Small and minority business participation is encouraged.

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: purchasing.sc.edu

PLAN DEPOSIT AMOUNT: $ $0.00 **IS DEPOSIT REFUNDABLE** Yes ☐ No ☐ N/A ☒

Bidders must obtain Bidding Documents/Plans from the above listed source(s) to be listed as an official plan holder. Only those Bidding Documents/Plans obtained from the above listed source(s) are official. Bidders that rely on copies of Bidding Documents/Plans obtained from any other source do so at their own risk. All written communications with official plan holders & bidders **WILL** ☒ **WILL NOT** ☐ be via email or website posting.

IN ADDITION TO THE ABOVE OFFICIAL SOURCE(S), BIDDING DOCUMENTS/PLANS ARE ALSO AVAILABLE AT:

Bidding documents are only available for down at http://purchasing.sc.edu (Facilities/Construction Solicitations and Awards)

All questions & correspondence concerning this Invitation shall be addressed to the A-E.

A-E NAME: The Boudreaux Group, Inc.

A-E CONTACT: Kimberly Steele, AIA

A-E ADDRESS: **Street/PO Box**: P.O. Box 5695

City: Columbia **State:** South Carolina **ZIP**: 29250-

EMAIL: ksteele@boudreauxgroup.com

TELEPHONE: 803-799-0247 **FAX:** 803-771-6844

AGENCY: University of South Carolina

AGENCY PROJECT COORDINATOR: Juaquana Brookins

ADDRESS: **Street/PO Box**: 743 Greene Street

City: Columbia **State: South Carolina** **ZIP:** 29208-

EMAIL:

TELEPHONE: 803-777-3596 **FAX:** 803-777-7334

PRE-BID CONFERENCE: Yes ☒ No ☐ **MANDATORY ATTENDANCE:** Yes ☐ No ☒

PRE-BID DATE: 6/9/2015 **TIME:** 10:00am **PLACE:** USC Campus Planning Office 743 Greene St. Columbia, SC 29208

BID CLOSING DATE: 6/23/2015 **TIME:** 2:00pm **PLACE:** USC Campus Planning Office 743 Greene St. Columbia, SC 29208

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Juaquana Brookins - Bid Enclosed
743 Greene Street
Columbia, SC 29201

MAIL SERVICE:

Attn: Juaquana Brookins - Bid Enclosed
743 Greene Street
Columbia, SC 29201

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? ***(Agency MUST check one)*** Yes ☒ No ☐

APPROVED BY: _____ **DATE:** _____

(OSE Project Manager)

AIA® Document A701™ – 1997

Instructions to Bidders

for the following PROJECT:
(Name and location or address)
DM12 Humanities CR Elevators/Machine Room
H-27-6100

THE OWNER:
(Name, legal status and address)
University of South Carolina
743 Greene Street
Columbia, SC 29205

THE ARCHITECT:
(Name, legal status and address)
The Boudreaux Group, Inc.
1330 Lady Street, Suite 500
Columbia, SC 29201

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.

TABLE OF ARTICLES

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 other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 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 as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 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 and who meets the requirements set forth in the Bidding Documents.

§ 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 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

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

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 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.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. 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. 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.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 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 all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, 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. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, 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 the power of attorney.

§ 4.2.3 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 bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and 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, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS

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.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. 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 own 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 low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

§ 6.2 OWNER'S FINANCIAL CAPABILITY

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 SUBMITTALS

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

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; 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.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

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

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

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

OSE FORM 00201
STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

AGENCY: University of South Carolina

PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room

PROJECT NUMBER: H27-6100

PROJECT LOCATION: Columbia, SC

PROCUREMENT OFFICER: Juaquana Brookins

1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

1.1 These Standard Supplemental Instructions to Bidders amend or supplement Instructions to Bidders (AIA Document A701-1997) and other provisions of Bidding and Contract Documents as indicated below.

1.2 Compliance with these Standard Supplemental Instructions is required by the Office of State Engineer (OSE) for all State projects when competitive sealed bidding is used as the method of procurement.

1.3 All provisions of the A701-1997, which are not so amended or supplemented, remain in full force and effect.

1.4 Bidders are cautioned to carefully examine the Bidding and Contract Documents for additional instructions or requirements.

2. MODIFICATIONS TO A701-1997

2.1 *Delete Section 1.1 and insert the following:*

1.1 Bidding Documents, collectively referred to as the **Invitation for Bids**, include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement, Instructions to Bidders (A-701), Supplementary Instructions to Bidders, the bid form (SE-330), the Notice of Intent to Award (SE-370), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda issued prior to execution of the Contract, and other documents set forth in the Bidding Documents. 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, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement between Owner and Contractor. 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, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

2.2 *In Section 1.8, delete the words "and who meets the requirements set forth in the Bidding Documents".*

2.3 *In Section 2.1, delete the word "making" and substitute the word "submitting."*

2.4 *In Section 2.1.1:*
After the words "Bidding Documents," delete the word "or" and substitute the word "and."

Insert the following at the end of this section:
Bidders are expected to examine the Bidding Documents and Contract Documents thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements. 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 Owner's attention prior to bid opening.

2.5 *In Section 2.1.3, insert the following after the term "Contract Documents" and before the period:*
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 Regulation 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.

2.6 *Insert the following Sections 2.2 through 2.6:*

2.2 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

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

OSE FORM 00201
STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

A. By submitting an 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—

a. Those prices;

b. The intention to submit an bid; or

c. 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.

B. 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 paragraphs A.1 through A.3 of this certification; or

2. **a.** 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 paragraphs A.1 through A.3 of this certification [As used in this subdivision B.2.a, the term "principals" means the person(s) in the bidder's organization responsible for determining the prices offered in this bid];

b. As an authorized agent, does certify that the principals referenced in subdivision B.2.a of this certification have not participated, and will not participate, in any action contrary to paragraphs A.1 through A.3 of this certification; and

c. As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs A.1 through A.3 of this certification.

C. If the bidder deletes or modifies paragraph (a)(2) of this certification, the bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

2.3 DRUG FREE WORKPLACE

By submitting a bid, the Bidder certifies that Bidder will maintain a drug free workplace in accordance with the requirements of Title 44, Chapter 107 of South Carolina Code of Laws, as amended.

2.4 CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS

A. **1.** By submitting an Bid, Bidder certifies, to the best of its knowledge and belief, that-

a. Bidder and/or any of its Principals-

(i) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;

(ii) 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

(iii) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph A.1.a.(ii) of this provision.

b. 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.

2. "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).

B. 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.

C. If Bidder is unable to certify the representations stated in paragraphs A.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 nonresponsible.

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 paragraph A. 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.

D. The certification in paragraph A. 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.

2.5 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 South Carolina Code of Laws, as amended (ethics act). The following statutes require special attention: Section 8-13-700, regarding use of official position for financial gain; Section 8-13-705, regarding gifts to influence action of public official; Section 8-13-720, regarding offering money for advice or assistance of public official; Sections 8-13-755 and 8-13-760, regarding restrictions on employment by former public official; Section 8-13-775, prohibiting public official with economic interests from acting on contracts; Section 8-13-790, regarding recovery of kickbacks; Section 8-13-1150, regarding statements to be filed by consultants; and Section 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 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, contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed.

2.6 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. (a) 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. (b) 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.*** (c) 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. Regulation 19-445.2165(C) broadly defines the term donor.

2.7 IRAN DIVESTMENT ACT CERTIFICATION

(a) The Iran Divestment Act List is a list published by the Board pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. Currently, the list is available at the following URL: http://procurement.sc.gov/PS/PS-iran-divestment.phtm(.) Section 11-57-310 requires the government to provide a person ninety days written notice before he is included on the list. The following representation, which is required by Section 11-57-330(A), is a material inducement for the State to award a contract to you. (b) By signing your Offer, you certify that, as of the date you sign, you are not on the then-current version of the Iran Divestment Act List. (c) You must notify the Procurement Officer immediately if, at any time before posting of a final statement of award, you are added to the Iran Divestment Act List.

2.7 *Delete Section 3.1.1 and substitute the following:*

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement in the number and for the deposit sum, if any, stated therein. If so provided in the Advertisement, the deposit will be refunded to all plan holders who return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

2.8 *Delete the language of Section 3.1.2 and insert the word "Reserved."*

2.9 *In Section 3.1.4, delete the words "and Architect may make" and substitute the words "has made."*

2.10 *Insert the following Section 3.1.5*

3.1.5 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.

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2.11 *In Section 3.2.2:*

Delete the words "and Sub-bidders"

Delete the word "seven" and substitute the word "ten"

2.12 *In Section 3.2.3:*

In the first Sentence, insert the word "written" before the word "Addendum."

Insert the following at the end of the section:

As provided in Regulation 19-445.2042(B), nothing stated at the pre-bid conference shall change the Bidding Documents unless a change is made by written Addendum.

2.13 *Insert the following at the end of Section 3.3.1:*

Reference in the Bidding Documents to a designated material, product, thing, or service by specific brand or trade name followed by the words "or equal" and "or approved equal" shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition.

2.14 *Delete Section 3.3.2 and substitute the following:*

3.3.2 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 days prior to the date for receipt of Bids established in the Invitation for Bids. 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. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. 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. 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.

2.15 *Delete Section 3.4.3 and substitute the following:*

3.4.3 Addenda will be issued no later than 120 hours prior to the time for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

2.16 *Insert the following Sections 3.4.5 and 3.4.6:*

3.4.5 When the date for receipt of Bids is to be postponed and there is insufficient time to issue a written Addendum prior to the original Bid Date, Owner will notify prospective Bidders by telephone or other appropriate means with immediate follow up with a written 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) calendar 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 at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference.

2.17 *In Section 4.1.1, delete the word "forms" and substitute the words "SE-330 Bid Form."*

2.18 *Delete Section 4.1.2 and substitute the following:*

4.1.2 Any blanks on the bid form to be filled in by the Bidder shall be legibly executed in a non-erasable medium. Bids shall be signed in ink or other indelible media.

2.19 *Delete Section 4.1.3 and substitute the following:*

4.1.3 Sums shall be expressed in figures.

2.20 *Insert the following at the end of Section 4.1.4:*

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.

2.21 *Delete Section 4.1.5 and substitute the following:*

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." For add alternates to the base bid, Subcontractor(s) listed on page BF-2 of the Bid Form to perform Alternate Work shall be used for both Alternates and Base Bid Work if Alternates are accepted.

2.22 *Delete Section 4.1.6 and substitute the following:*

4.1.6 Pursuant to Title 11, Chapter 35, Section 3020(b)(i) of the South Carolina Code of Laws, as amended, Section 7 of the Bid Form sets forth a list of subcontractor specialties for which Bidder is required to identify only those subcontractors Bidder will use to perform the work of each listed specialty. 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.

2.23 *Delete Section 4.1.7 and substitute the following:*

4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

2.24 *Delete Section 4.2.1 and substitute the following:*

4.2.1 If required by the Invitation for Bids, 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. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, 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.

2.25 *Delete Section 4.2.2 and substitute the following:*

4.2.2 If a surety bond is required, 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 the power of attorney. The bid bond shall:

- **.1** Be issued by a surety company licensed to do business in South Carolina;
- **.2** 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.

2.26 *Delete Section 4.2.3 and substitute the following:*

4.2.3 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.

2.27 *Insert the following Section 4.2.4:*

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, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

2.28 *Delete Section 4.3.1 and substitute the following:*

4.3.1 All copies of the Bid, the bid security, if any, 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 for Bids. 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 envelope should be labeled "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 for Bids prior to the time of the Bid Opening.

2.29 *Insert the following Section 4.3.6 and substitute the following:*

4.3.5 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.

2.30 *Delete Section 4.4.2 and substitute the following:*

4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be withdrawn in person or by written notice to the party receiving Bids at the place designated for receipt of Bids. Withdrawal by written notice shall be in writing over the signature of the Bidder.

2.31 *In Section 5.1, delete everything following the caption "OPENING OF BIDS" and substitute the following:*

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

5.1.2 At bid opening, Owner will announce the date and location of the posting of the Notice of Intended Award.

5.1.3 Owner will send a copy of the final Bid Tabulation to all Bidders within ten (10) working days of the Bid Opening.

5.1.4 If Owner determines to award the Project, Owner will, after posting a Notice of Intended Award, send a copy of the Notice to all Bidders.

5.1.5 If only one Bid is received, Owner will open and consider the Bid.

2.32 *In Section 5.2, insert the section number "5.2.1" before the words of the "The Owner" at the beginning of the sentence.*

2.33 *Insert the following Sections 5.2.2 and 5.2.3:*

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 their 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.

2.34 *Delete Section 6.1 and substitute the following:*

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

2.35 *Delete the language of Section 6.2 and insert the word "Reserved."*

2.36 *Delete the language of Sections 6.3.2, 6.3.3, and 6.3.4 and insert the word "Reserved" after each Section Number.*

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2.37 *Insert the following Section 6.4*

6.4 CLARIFICATION

Pursuant to Section 11-35-1520(8), the Procurement Officer may elect to communicate with a Bidder after opening for the purpose of clarifying either the Bid or the requirements of the Invitation for Bids. Such communications may be conducted only with Bidders who have submitted a Bid which obviously conforms in all material aspects to the Invitation for Bids and only in accordance with Appendix D (Paragraph A(6)) to the Manual for Planning and Execution of State Permanent Improvement, Part II. Clarification of a Bid must be documented in writing and included with the Bid. Clarifications may not be used to revise a Bid or the Invitation for Bids. [Section 11-35-1520(8); R.19-445.2080]

2.38 *Delete Section 7.1.2 and substitute the following:*

7.1.2 The performance and payment bonds shall conform to the requirements of Section 11.4 of the General Conditions of the Contract. If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid.

2.39 *Delete the language of Section 7.1.3 and insert the word "Reserved."*

2.40 *In Section 7.2, insert the words "CONTRACT, CERTIFICATES OF INSURANCE" into the caption after the word "Delivery."*

2.41 *Delete Section 7.2.1 and substitute the following:*

7.2.1 After expiration of the protest period, the Owner will tender a signed Contract for Construction to the Bidder and the Bidder shall return the fully executed Contract for Construction to the Owner within seven days thereafter. The Bidder shall deliver the required bonds and certificate of insurance to the Owner not later than three 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.

2.42 *Delete the language of Section 7.2.2 and insert the word "Reserved."*

2.43 *Delete the language of Article 8 and insert the following:*

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on South Carolina Modified AIA Document A101, 2007, Standard Form of Agreement Between Owner and Contractor as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor.

2.44 *Insert the following Article 9:*

ARTICLE 9 MISCELLANEOUS

9.1 NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING
IMPORTANT TAX NOTICE - NONRESIDENTS ONLY

Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws 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.

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: www.sctax.org

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).

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9.2 CONTRACTOR LICENSING

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 at the time of bidding.

9.3 SUBMITTING CONFIDENTIAL INFORMATION

For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that 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 Section 11-35-410. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Bidder contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "PROTECTED" every page, or portion thereof, that Bidder contends is protected by Section 11-35-1810. 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 page. 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. In determining whether to release documents, the State will detrimentally rely on Bidders's marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED". By submitting a response, 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".

9.4 POSTING OF INTENT TO AWARD

Notice of Intent to Award, SE-370, will be posted at the following location:

Room or Area of Posting: Receptionist Area

Building Where Posted: USC Campus Planning and Construction Office

Address of Building: 743 Greene 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

9.5 PROTEST OF SOLICITATION OR AWARD

Any prospective bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen days of the date of issuance of the applicable solicitation document at issue. Any actual bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest within ten days of the date notification of intent to award is posted in accordance with Title 11, Chapter 35, Section 4210 of the South Carolina Code of Laws, as amended. A protest shall be in writing, shall set forth the grounds of the protest and the relief requested with enough particularity to give notice of the issues to be decided, and must be received by the State Engineer within the time provided.

Any protest must be addressed to the CPO, Office of State Engineer, and submitted in writing:

A. by email to protest-ose@mmo.sc.gov,

B. by facsimile at 803-737-0639, or

C. 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.

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9.6 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.

9.7 BUILDER'S RISK INSURANCE

Bidders are directed to Article 11.3 of the South Carolina Modified AIA Document A201, 2007 Edition, which, unless provided otherwise in the bid documents, requires the contractor to provide builder's risk insurance on the project.

9.8 TAX CREDIT FOR SUBCONTRACTING WITH MINORITY FIRMS

Pursuant to Section 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. 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. 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: SC §11-35-5010 – Definition for Minority Subcontractor & SC §11-35-5230 (B) – Regulations for Negotiating with State Minority Firms.

9.9 OTHER SPECIAL CONDITIONS OF THE WORK

None

END OF DOCUMENT

AIA® Document A310™ – 2010

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
743 Greene Street
Columbia, SC 29208

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)
H27-6100
USC DM12 Humanities CR Elevators/Machine Room

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.

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.

Signed and sealed this day of ,

	(Contractor as Principal) *(Seal)*
(Witness)	*(Title)*
	(Surety) *(Seal)*
(Witness)	*(Title)*

SE-330
LUMP SUM BID FORM

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

BID SUBMITTED BY: _____

(Bidder's Name)

BID SUBMITTED TO: University of South Carolina

(Owner's Name)

FOR: PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room

PROJECT NUMBER: H27-6100

OFFER

§ 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 Owner 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 Section 11-35-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

☐ **Bid Bond with Power of Attorney** ☐ **Electronic Bid Bond** ☐ **Cashier's Check**

(Bidder check one)

§ 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: ☐ **#1** ☐ **#2** ☐ **#3** ☐ **#4** ☐ **#5**

§ 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 **60** Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

§ 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)*****:** Alteration of two (2) geared elevators and construction of rated, conditioned machine room enclosure.

$ _____, which sum is hereafter called the Base Bid.

(Bidder - insert Base Bid Amount on line above)

SE-330
LUMP SUM BID FORM

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

ALTERNATE # 1 *(Brief Description)*: _____

☐ **ADD TO** or ☐ **DEDUCT FROM BASE BID: $** _____

(Bidder to Mark appropriate box to clearly indicate the price adjustment offered for each alternate)

ALTERNATE # 2 *(Brief Description)*: _____

☐ **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)*: _____

☐ **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.

No.	ITEM	Unit of Measure	ADD	DEDUCT
1.	n/a		**$**	**$**
2.	n/a		**$**	**$**
3.	n/a		**$**	**$**
4.	n/a		**$**	**$**
5.	n/a		**$**	**$**
6.	n/a		**$**	**$**

SE-330
LUMP SUM BID FORM

§ 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:

SUBCONTRACTOR CLASSIFICATION **By License Classification and/or Subclassification** *(Completed by Owner)*	**SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME** *(Must be completed by Bidder)*	**SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER** *(Requested, but not Required)*
BASE BID		
n/a		
ALTERNATE #1		
n/a		
ALTERNATE #2		
n/a		
ALTERNATE #3		
n/a		

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.

SE-330
LUMP SUM BID FORM

INSTRUCTIONS FOR SUBCONTRACTOR LISTING

1. Section 7 of the Bid Form sets forth an Owner developed list of contractor/subcontractor specialties by contractor license category and/or subcategory for which bidder is required to identify the entity (subcontractor(s) and/or himself) Bidder will use to perform the work of each listed specialty..

- **a. Column A**: The Owner fills out this column, which identifies the contractor/subcontractor specialties for which the bidder must list either a subcontractor or himself as the entity that will perform this work. Subcontractor specialties are identified by contractor license categories or subcategories listed in Title 40 of the South Carolina Code of laws. If the owner has not identified a specialty, the bidder does not list a subcontractor.
- **b. Columns B and C:** In these columns, the Bidder identifies the subcontractors it will use for the work of each specialty listed by the Owner in Column A. Bidder must identify only the subcontractor(s) who will perform the work and no others. Bidders should 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 more 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 with the license classification and/or subclassification identified by the Owner in the first column on the left. The subcontractor license must also be within the appropriate license group for the work of the specialty. 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, Bidder is qualified to perform the work of a listed specialty and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.

5. **Use of Multiple Subcontractors:**

- **a.** If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, 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 specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**. Bidder must use each entity listed for the work of a single specialty listing in the performance of that work.
- **b. Optional Listing Prohibited:** Bidder may not list multiple subcontractors for a specialty listing, in a form that provides the Bidder the option, after bid opening or award, to choose to use 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 specialty 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 for that specialty. 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 specialty listed in the first column on the left will render the Bid non-responsive.

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LUMP SUM BID FORM

§ 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 Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other 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 SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME 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 Owner. Bidder agrees to substantially complete the Work within **180** 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 Owner shall retain as Liquidated Damages the amount of $ **250.00** 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.

§ 10. AGREEMENTS

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.

§ 11. ELECTRONIC BID BOND

By 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.

ELECTRONIC BID BOND NUMBER: _____

SIGNATURE AND TITLE: _____

SE-330
LUMP SUM BID FORM

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 Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

EMAIL: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____

TITLE: _____

AIA® Document A101™ – 2007

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

AGREEMENT made as of the TBD day of TBD in the year 2015
(In words, indicate day, month and year.)

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

The University of South Carolina
743 Greene Street
Columbia, SC 29201

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

TBD

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

DM12 Humanities CR Elevators/Machine Room
H-27-6100

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

The Boudreaux Group, Inc.
1330 Lady Street, Suite 500
Columbia, SC 29201

The Owner and Contractor agree as follows.

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

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

To be fixed in a notice to proceed

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

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than One Hundred Eighty (180) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work	Substantial Completion Date
All work as identified in the Construction Documents dated 4/30/15	

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

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

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

TBD

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

Item	Units and Limitations	Price Per Unit ($0.00)
As detailed in the Project Manual dated 4/30/15, if applicable		

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price
As detailed in the Project Manual dated 4/30/15, if applicable	

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

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

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

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the 25th day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the 25th day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than Thirty (30) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, 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 other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of Three point Five percent (3.5 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of Three point Five percent (3.5 %);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 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 Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

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

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[X] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

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 A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

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

%

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

Mr. Chris Mergner
Project Manager
University of South Carolina
743 Greene Street
Columbia, SC 29205

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

TBD

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

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

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

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
As detailed in the Project Manual dated 4/30/15	Supplementary Conditions		

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
As detailed in the Project Manual 'Table of Contents' dated 4/30/15

Section	Title	Date	Pages

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
As detailed in the Project Manual 'Index of Drawings' dated 4/30/15

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
TBD		

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

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

.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond	**Limit of liability or bond amount ($0.00)**
As detailed in the Project Manual dated 4/30/15	

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)*

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

AGENCY: University of South Carolina
PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room
PROJECT NUMBER: H27-6100

1. STANDARD MODIFICATIONS TO AIA A101-2007

1.1 These Standard Modifications amend or supplement the *Standard Form of Agreement Between Owner and Contractor* (AIA Document A101-2007) and other provisions of Bidding and Contract Documents as indicated below.

1.2 All provisions of A101-2007, which are not so amended or supplemented, remain in full force and effect.

2. MODIFICATIONS TO A101

2.1 *Insert the following at the end of Article 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 A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. 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, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

2.2 *Delete Section 3.1 and substitute the following:*

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 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.

2.3 *Delete Section 3.2 and substitute the following:*

3.2 The Contract Time as provided in Section 9(a) of the Bid Form (SE-330) for this Project shall be measured from the Date of Commencement. Contractor agrees that if the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, the Owner shall be entitled to withhold or recover from the Contractor Liquidated Damages in the amounts set forth in Section 9(b) of the Bid Form (SE-330), subject to adjustments of this Contract Time as provided in the Contract Documents.

2.4 *In Section 5.1.1, insert the words "and Owner" after the phrase "Payment submitted to the Architect."*

2.5 *Delete Section 5.1.3 and substitute the following:*

5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than 21 days after receipt of the Application for Payment.

2.6 *In Section 5.1.6, insert the following after the phrase "Subject to other provisions of the Contract Documents":*
and subject to Title 12, Chapter 8, Section 550 of the South Carolina Code of Laws, as amended (Withholding Requirements for Payments to Non-Residents).

In the spaces provided in Sub-Sections 1 and 2 for inserting the retainage amount, insert "three and one-half percent (3.5%)."

2.7 *In Section 5.1.8, delete the word "follows" and the colon and substitute the following:*
set forth in S.C. Code Ann. § 11-35-3030(4).

2.8 *In Section 5.1.9, delete the words "Except with the Owner's prior approval, the" before the word " Contractor."*

2.9 *In Section 5.2.2, delete the number 30 and substitute the number 21, delete everything following the words "Certificate for Payment" and place a period at the end of the resulting sentence.*

2.10 *Delete the language of Sections 6.1 and 6.2 and substitute the word "Reserved" for the deleted language of each Section.*

2.11 *Delete the language of Section 8.2 and substitute the word "Reserved."*

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

2.12 *In Section 8.3, make the word "Representative" in the title plural, delete everything following the title, and substitute the following:*

8.3.1 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: Sr. Project Manager

Address: 743 Greene Street Columbia, SC 29208

Telephone: 803-777-7076 **FAX:**

Email: Tnopal@fmc.sc.edu

8.3.2 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: Christian Mergner

Title: Project Manager

Address: 743 Greene Street Columbia, SC 29208

Telephone: 803-777-5811 **FAX:**

Email: cmergner@fmc.sc.edu

2.13 *In Section 8.4, make the word "Representative" in the title plural, delete everything following the title, and substitute the following:*

8.4.1 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:

Title:

Address:

Telephone: **FAX:**

Email:

8.4.2 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: **FAX:**

Email:

2.14 *Add the following Section 8.6.1:*

8.6.1 The Architect's representative:

Name: Kimberly Steele, AIA

Title: Project Manager

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OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

2.15 *In Section 9.1.7, Sub-Section 2, list the following documents in the space provided for listing documents:*

Invitation for Construction Services (SE-310)
Instructions to Bidders (AIA Document A701-1997)
Standard Supplemental Instructions to Bidders (OSE Form 00201)
Contractor's Bid (Completed SE-330)
Notice of Intent to Award (Completed SE-370)

2.16 *In Article 10, delete everything after the first sentence.*

END OF DOCUMENT

A201

General Conditions of the Contract for Construction

(2007 Edition)

Original AIA Document on file at the office of

University of South Carolina

743 Greene Street

Columbia, South Carolina 29208

OSE FORM 00811
STANDARD SUPPLEMENTARY CONDITIONS

AGENCY: University of South Carolina

PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room

PROJECT NUMBER: H27-6100

1. GENERAL CONDITIONS

The *General Conditions of the Contract for Construction*, AIA Document A201, 2007 Edition, Articles 1 through 15 inclusive, is a part of this Contract and is incorporated as fully as if herein set forth. For brevity, AIA Document A201 is also referred to in the Contract Documents collectively as the "General Conditions."

2. STANDARD SUPPLEMENTARY CONDITIONS

2.1 The following supplements modify, delete and/or add to the General Conditions. Where any portion of the General Conditions is modified or any paragraph, Section or clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of the General Conditions shall remain in effect.

2.2 Unless otherwise stated, the terms used in these Standard Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

3. MODIFICATIONS TO A201-2007

3.1 *Insert the following at the end of Section 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 A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement between Owner and Contractor. 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, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

3.2 *Delete the language of Section 1.1.8 and substitute the word "Reserved."*

3.3 *Add the following Section 1.1.9:*

1.1.9 NOTICE TO PROCEED

Notice to Proceed is a document issued by the Owner to the Contractor, with a copy to the Architect, 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.

3.4 *Insert the following at the end of Section 1.2.1:*

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.

3.5 *Delete Section 1.5.1 and substitute the following:*

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

3.6 *Delete Section 2.1.1 and substitute the following:*

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 7.1.2. 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. [Reference § 8.2 of the Agreement.]

3.7 *Delete Section 2.1.2 and substitute the following:*

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to post Notice of Project Commencement pursuant to Title 29, Chapter 5, Section 23 of the South Carolina Code of Laws, as amended.

3.8 *Delete Section 2.2.3 and substitute the following:*

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. 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.

3.9 *Replace the period at the end of the last sentence of Section 2.2.4 with a semicolon and insert the following after the inserted semicolon:*

"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 provide in the Contract Documents."

3.10 *Delete Section 2.2.5 and substitute the following:*

2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor with ten copies of the Contract Documents. The Contractor may make reproductions of the Contract Documents pursuant to Section 1.5.2. All copies of the drawings and specifications, except the Contractor's record set, shall be returned or suitably accounted for to the Owner, on request, upon completion of the Work.

3.11 *Add the following Sections 2.2.6 and 2.2.7:*

2.2.6 The Owner assumes no responsibility for any conclusions or interpretation made by the Contractor based on information made available by the Owner.

2.2.7 The Owner shall obtain, at its own cost, general building and specialty inspection services as required by the Contract Documents. The Contractor shall be responsible for payment of any charges imposed for reinspections.

3.12 *Delete Section 2.4 and substitute the following:*

2.4 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect, 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 deficiencies. In such case an appropriate Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

3.13 *Insert the following at the end of Section 3.2.1:*

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 (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. 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 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. Any failure of the Contractor to take the actions described and acknowledged in this paragraph 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.

3.14 *In the third sentence of Section 3.2.4, insert the word "latent" before the word "errors."*

3.15 *In the last sentence of Section 3.3.1, insert the words "by the Owner in writing" after the word "instructed."*

3.16 *Delete the third sentence of Section 3.5 and substitute the following sentences:*
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.

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3.17 *Insert the following at the end of Section 3.6:*
The Contractor shall comply with the requirements of Title 12, Chapter 9 of the South Carolina Code of Laws, as amended, regarding withholding tax for nonresidents, employees, contractors and subcontractors.

3.18 *In Section 3.7.1, delete the words "the building permit as well as for other" and insert the following sentence at the end of this section:*

Pursuant to Title 10, Chapter 1, Section 180 of the South Carolina Code of Laws, as amended, no local general or specialty building permits are required for state buildings.

3.19 *Delete the last sentence of Section 3.7.5 and substitute the following:*

Adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 7.3.3.

3.20 *Delete the last sentence of Section 3.8.2.3 and substitute the following:*

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.

3.21 *In Section 3.9.1, insert a comma after the word "superintendent" in the first sentence and insert the following after the inserted comma:*

acceptable to the Owner,

3.22 *Delete Section 3.9.2 and substitute the following:*
3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the name and qualifications of a proposed superintendent. The Owner may reply within 14 days to the Contractor in writing stating (1) whether the Owner has reasonable objection to the proposed superintendent or (2) that the Owner requires additional time to review. Failure of the Owner to reply within the 14-day period shall constitute notice of no reasonable objection.

3.23 *After the first sentence in Section 3.9.3, insert the following sentence:*

The Contractor shall notify the Owner, in writing, of any proposed change in the superintendent, including the reason therefore, prior to making such change.

3.24 *Delete Section 3.10.3 and substitute the following:*

3.10.3 Additional requirements, if any, for the constructions 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 primavera-type 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 dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents and attached to the Agreement as Exhibit "A." If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. 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 approved 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 accepted construction schedule to reflect such conditions. 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. 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.

3.25 *Add the following Section 3.10.4:*

3.10.4 Owner's review and acceptance of Contractor's schedule is not conducted for the purpose of either determining its accuracy and completeness or approving the construction means, methods, techniques, sequences or procedures. The Owner's approval shall not relieve the Contractor of any obligations. Unless expressly addressed in a Modification, the Owner's approval of a schedule shall not change the Contract Time.

3.26 *Add the following Section 3.12.5.1:*

3.12.5.1 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. The fire sprinkler shop drawings shall be reviewed and approved by the Architect's engineer of record who, upon approving the sprinkler shop drawings will submit them to the State Fire Marshal or other authorities having jurisdiction for review and approval. The Architect's engineer of record will submit a copy of the State Fire Marshal's approval letter to the Contractor, Architect, and OSE. Unless authorized in writing by OSE, neither the Contractor nor subcontractor at any tier shall submit the fire sprinkler shop drawings directly to the State Fire Marshal or other authorities having jurisdiction for approval.

3.27 *In the fourth sentence of Section 3.12.10, after the comma following the words "licensed design professional," insert the following:*

who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and

3.28 *In Section 3.13, insert the section number "3.13.1" before the before the opening words "The Contractors shall."*

3.29 Add the following Sections 3.13.2 and 3.13.3:

3.13.2 Protection of construction materials and equipment stored at the Project site from weather, theft, vandalism, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall perform the work in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause hazardous conditions.

3.13.3 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.

3.30 *In the first sentence of Section 3.18.1, after the parenthetical "…(other than the Work itself),…" and before the word "…but...", insert the following:*

including loss of use resulting therefrom,

3.31 *Delete Section 4.1.1 and substitute the following:*

4.1.1 The Architect is that person or entity identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

3.32 *Insert the following at the end of Section 4.2.1:*

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 fourteen days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.

3.33 *Delete the first sentence of Section 4.2.2 and substitute the following:*

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 various components of the Contractor's Work, and to determine 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.

3.34 *Delete the first sentence of Section 4.2.3 and substitute the following*:

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 report to the Owner (1) deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work.

3.35 *In Section 4.2.5, after the words "evaluations of the" and before the word "Contractor's," insert the following:*

Work completed and correlated with the

3.36 *Delete the first sentence of Section 4.2.11 and substitute the following:*

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 non-requesting party with a copy of the request.

3.37 *Insert the following at the end of Section 4.2.12:*

If either party disputes the Architects 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.

3.38 *Delete Section 4.2.14 and substitute the following:*

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

3.39 *Delete Section 5.2.1 and substitute the following:*

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within fourteen days after posting of the Notice of Intent to Award the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (excluding Listed Subcontractors but including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Owner may reply within 14 days to the Contractor in writing stating (1) whether the Owner has reasonable objection to any such proposed person or entity. Failure of the Owner to reply within the 14 day period shall constitute notice of no reasonable objection.

3.40 *Delete Section 5.2.2 and substitute the following:*

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 services.

3.41 *In the first sentence of Section 5.2.3, delete the words "…or Architect…" in the two places they appear.*

3.42 *Delete the words "…or Architect…" in the in the first sentence of Section 5.2.4 and insert the following sentence at the end of Section 5.2.4:*

The Contractor's request for substitution must be made to the Owner in writing accompanied by supporting information.

3.43 *Add the following Section 5.2.5:*

5.2.5 A Subcontractor identified in the Contractor's Bid in response the specialty subcontractor listing requirements of Section 7 of the Bid Form (SE-330) may only be substituted in accordance with and as permitted by the provisions of Title 11, Chapter 35, Section 3021 of the South Carolina Code of Laws, as amended. A proposed substitute for a Listed Subcontractor shall be subject to the Owner's approval as set forth is Section 5.2.3.

3.44 *Add the following Section 5.2.6:*

5.2.6 The Iran Divestment Act List is a list published by the Board pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. Currently, the list is available at the following URL: http://procurement.sc.gov/PS/PS-iran-divestment.phtm(.) Consistent with Section 11-57-330(B), the Contractor shall not contract with any person to perform a part of the Work, if, at the time you enter into the subcontract, that person is on the then-current version of the Iran Divestment Act List.

3.45 *In Section 5.3, delete everything following the heading "SUBCONTRACTUAL RELATIONS" and insert the following Sections 5.3.1, 5.3.2, 5.3.3, and 5.3.4:*

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, which the Contractor, by these 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, 7.3.3, 7.5, 7.6, 13.1, 13.12, 14.3, 14.4, and 15.1.6.

5.3.3 Each Subcontract Agreement and each Sub-subcontract agreement shall exclude, and shall be deemed to exclude, Sections 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, 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 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, 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 Subparagraph 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.

3.46 *Delete the last sentence of Section 5.4.1.*

3.47 *Add the following Sections 5.4.4, 5.4.5 and 5.4.6:*

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.

3.48 *Delete the language of Section 6.1.4 and substitute the word "Reserved."*

3.49 *Insert the following at the end of Section 7.1.2:*

If the amount of a Modification exceeds the limits of the Owner's Construction Change Order Certification (reference Section 9.1.7.2 of the Agreement), then the Owner's agreement is not effective, and Work may not proceed, until approved in writing by the Office of State Engineer.

3.50 *Delete Section 7.2.1 and substitute the following:*

7.2.1 A Change Order is a written instrument prepared by the Architect (using State Form SE-380 "Construction Change Order") 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.

3.51 *Add the following Sections 7.2.2, 7.2.3, 7.2.4, and 7.2.5:*

7.2.2 If a Change Order provides for an adjustment to the Contract Sum, the adjustment must be calculated in accordance with Section 7.3.3.

7.2.3 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 7.2.2. The Owner's request shall include any revisions to the Drawings or Specifications necessary to define any changes in the Work. Within fifteen days of receiving the request, the Contractor shall submit the proposal to the Owner and Architect along with all documentation required by Section 7.6.

7.2.4 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 7.2.3. 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.

7.2.5 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.

3.52 *Delete 7.3.3 and substitute the following:*

7.3.3 PRICE ADJUSTMENTS

7.3.3.1 If any Modification, including a Construction Change Directive, provides for an adjustment to the Contract Sum, the adjustment shall be based on whichever of the following methods is the most valid approximation of the actual cost to the contractor, with overhead and profit as allowed by Section 7.5:

- **.1** Mutual acceptance of a lump sum;
- **.2** Unit prices stated in the Contract Documents, except as provided in Section 7.3.4, or subsequently agreed upon;
- **.3** Cost attributable to the events or situations under applicable clauses with adjustment of profits or fee, all as specified in the contract, or subsequently agreed upon by the parties, or by some other method as the parties may agree; or
- **.4** As provided in Section 7.3.7.

7.3.3.2 Consistent with Section 7.6, costs must be properly itemized and supported by substantiating data sufficient to permit evaluation before commencement of the pertinent performance or as soon after that as practicable. All costs incurred by the Contractor must be justifiably compared with prevailing industry standards. Except as provided in Section 7.5, all adjustments to the Contract Price shall be limited to job specific costs and shall not include indirect costs, overhead, home office overhead, or profit.

3.53 *Delete Section 7.3.7 and substitute the following:*

7.3.7 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 7.5. In such case, and also under Section 7.3.3.1.3, 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 7.3.7 shall be limited to the following:

- **.1** Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- **.2** Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- **.3** Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and
- **.4** Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work.

3.54 *Delete Section 7.3.8 and substitute the following:*

7.3.8 Using the percentages stated in Section 7.5, any adjustment to the Contract Sum for deleted work shall include any overhead and profit attributable to the cost for the deleted Work.

3.55 *Add the following Sections 7.5 and 7.6:*

7.5 AGREED OVERHEAD AND PROFIT RATES

7.5.1 For any adjustment to the Contract Sum for which overhead and profit may be recovered, other than those made pursuant to Unit Prices stated in the Contract Documents, the Contractor agrees to charge and accept, as full payment for overhead and profit, the following percentages of costs attributable to the change in the Work. The percentages cited below 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. The allowable percentages for overhead and profit are as follows:

.1 To the Contractor for work performed by the Contractor's own forces, 17% of the Contractor's actual costs.

.2 To each Subcontractor for work performed by the Subcontractor's own forces, 17% of the subcontractor's actual costs.

.3 To the Contractor for work performed by a subcontractor, 10% of the subcontractor's actual costs (not including the subcontractor's overhead and profit).

7.6 PRICING DATA AND AUDIT

7.6.1 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. 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.

7.6.2 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.

7.6.3 Records Retention.

As used in Section 7.6, the term "records" means any books or records that relate to cost or pricing data that Contractor is required to submit pursuant to Section 7.6.1. 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.

3.56 Delete Section 8.2.2 and substitute the following:

8.2.2 The Contractor shall not knowingly commence operations on the site or elsewhere prior to the effective date of surety bonds and insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such surety bonds or insurance.

3.57 *Delete Section 8.3.1 and substitute the following:*

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the control of the Contractor and any subcontractor at any tier; or by delay authorized by the Owner pending dispute resolution; or by other causes that the Architect determines may justify delay, then to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and 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, the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

3.58 *Insert the following at the end of Section 9.1:*

All changes to the Contract Sum shall be adjusted in accordance with Section 7.3.3.

3.59 *Delete Section 9.2 and substitute the following:*

9.2 SCHEDULE OF VALUES

9.2.1 The Contractor shall submit to the Architect, within ten days of full execution of the Agreement, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. As requested by the Architect, the Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible, such breakdown being submitted on a uniform standardized format approved by the Architect and Owner. The breakdown 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;

.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.

9.2.2 Any schedule of values or trade breakdown that fails to include 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.

3.60 *Delete Section 9.3.1 and substitute the following:*

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. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require (such as copies of requisitions from Subcontractors and material suppliers) and shall reflect retainage and any other adjustments provided in Section 5 of the Agreement. If required by the Owner or Architect, the Application for Payment shall be accompanied by a current construction schedule.

3.61 *In Section 9.3.2, add the following words to the end of the second sentence:*

provided such materials or equipment will be subsequently incorporated in the Work

Insert the following at the end of Section 9.3.2:

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.

3.62 *In Section 9.4.2, in the first sentence, after the words "Work has progressed to the point indicated," insert the following:*

in both the Application for Payment and, if required to be submitted by the Contractor, the accompanying current construction schedule

In the last sentence, delete the third item starting with "(3) reviewed copies" and ending with "Contractor's right to payment,"

3.63 *In Section 9.5.1, in the first sentence, delete the word "may" after the opening words "The Architect" and substitute the word "shall."*

In Section 9.5.1, insert the following sentence after the first sentence:

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.

3.64 *In Section 9.6.2,* d*elete the word "The…" at the beginning of the first sentence and substitute the following:*

Pursuant to Chapter 6 of Title 29 of the South Carolina Code of Laws, as amended, the

3.65 *Delete Section 9.7 and substitute following:*

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 a final dispute resolution order, then the Contractor may, upon seven additional days' written 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, in accordance with the provisions of Section 7.3.3, by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

3.66 *Insert the following words at the end of the sentence in Section 9.8.1:*

and when all required occupancy permits, if any, have been issued and copies have been delivered to the Owner.

3.67 *In Section 9.8.2, insert the word "written" after the word "comprehensive" and before the word "list."*

3.68 *Delete Section 9.8.3 and substitute the following:*

9.8.3.1 Upon receipt of the Contractor's list, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, 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. 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. If more than one Substantial Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.

9.8.3.2 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.

3.69 *In the second sentence of Section 9.8.5, delete the words "and consent of surety, if any."*

3.70 *In the first sentence of Section 9.9.1, delete the words "Section 11.3.1.5"and substitute the words "Section 11.3.1.3."*

3.71 *Delete Section 9.10.1 and substitute the following:*

9.10.1 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion no later than thirty days after Substantial Completion. Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. If more than one Final Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor. 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.

3.72 *Delete the first sentence of Section 9.10.2 and substitute the following:*

Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, (6) required Training Manuals, (7) equipment Operations and Maintenance Manuals, (8) any certificates of testing, inspection or approval required by the Contract Documents and not previously provided (9) all warranties and guarantees required under or pursuant to the Contract Documents, and (10) one copy of the Documents required by Section 3.11.

3.73 Delete the first sentence of Section 9.10.3 and substitute the following:

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 and accepted.

3.74 *Delete Section 9.10.5 and substitute the following:*

9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those 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.

3.75 *Add the following Section 9.10.6:*

9.10.6 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. Representatives of the State Fire Marshal's Office and other authorities having jurisdiction may be present at the Final Completion Inspection or otherwise inspect the completed Work and advise the Owner whether the Work meets their respective requirements for the Project.

3.76 *Delete Section 10.3.1 and substitute the following:*

10.3.1 If the Contractor encounters a hazardous material or substance which was not discoverable as provided in Section 3.2.1 and not required by 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 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 report the condition to the Owner and Architect in writing. 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.

3.77 *Insert the following at the end of Section 10.3.2:*

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 right of either party to disagree and assert a Claim in accordance with Article 15. Any adjustment in the Contract Sum shall be determined in accordance with Section 7.3.3.

3.78 *Delete Section 10.3.3 and substitute the following:*

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.

3.79 *In Section 10.3.5, delete the word "The" at the beginning of the sentence and substitute the following:*

In addition to its obligations under Section 3.18, the

3.80 *Delete the language of Section 10.3.6 and substitute the word "Reserved."*

3.81 *Insert the following at the end of Section 10.4:*

The Contractor shall immediately give the Architect notice of the emergency. This initial notice may be oral followed within five days by a written notice setting forth the nature and scope of the emergency. Within fourteen 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.

3.82 *Delete 11.1.2 and substitute the following:*

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

(1) COMMERCIAL GENERAL LIABILITY:
- **(a)** General Aggregate (per project) $1,000,000
- **(b)** Products/Completed Operations $1,000,000
- **(c)** Personal and Advertising Injury $1,000,000
- **(d)** Each Occurrence $1,000,000
- **(e)** Fire Damage (Any one fire) $50,000
- **(f)** Medical Expense (Any one person) $5,000

(2) BUSINESS AUTO LIABILITY (including All Owned, Non-owned, and Hired Vehicles):
- **(a)** Combined Single Limit $1,000,000

(3) WORKER'S COMPENSATION:
- **(a)** State Statutory
- **(b)** Employers Liability ..... $100,000 Per Acc.
  ..... $500,000 Disease, Policy Limit
  ..... $100,000 Disease, Each Employee

In lieu of separate insurance policies for Commercial General Liability, Business Auto Liability, and Employers Liability, the Contractor may provide an umbrella policy meeting or exceeding all coverage requirements set forth in this Section 11.1.2. The umbrella policy limits shall not be less than $3,000,000.

3.83 *Delete Section 11.1.3 and substitute the following:*

11.1.3 Prior to commencement of the Work, and thereafter upon replacement of each required policy of insurance, Contractor shall provide to the Owner a written endorsement to the Contractor's general liability insurance policy that:

- **(i)** names the Owner as an additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations;
- **(ii)** provides that no material alteration, cancellation, non-renewal, or expiration of the coverage contained in such policy shall have effect unless all additional insureds have been given at least ten (10) days prior written notice of cancellation for non-payment of premiums and thirty (30) days prior written notice of cancellation for any other reason; and
- **(iii)** provides that the Contractor's liability insurance policy shall be primary, with any liability insurance of the Owner as secondary and noncontributory.

Prior to commencement of the Work, and thereafter upon renewal or replacement of each required policy of insurance, Contractor shall provide to the Owner a signed, original certificate of liability insurance (ACORD 25). Consistent with this Section 11.1, the certificate shall identify the types of insurance, state the limits of liability for each type of coverage, name the Owner a Consultants as Certificate Holder, provide that the general aggregate limit applies per project, and provide that coverage is written on an occurrence basis. Both the certificates and the endorsements must be received directly from either the Contractor's insurance agent or the insurance company. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, naming the Owner as an additional insured for claims made under the Contractor's completed operations, and otherwise meeting the above requirements, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

3.84 *Delete Section 11.1.4 and substitute the following:*

11.1.4 A failure by the Owner either (i) to demand a certificate of insurance or written endorsement required by Section 11.1, or (ii) to reject a certificate or endorsement on the grounds that it fails to comply with Section 11.1 shall not be considered a waiver of Contractor's obligations to obtain the required insurance.

3.85 *In Section 11.3.1, delete the first sentence and substitute the following:*

Unless otherwise provided in the Contract Documents, the Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis.

3.86 *Delete the language of Section 11.3.1.2 and substitute the word "Reserved."*

3.87 *Delete the language of Section 11.3.1.3 and substitute the word "Reserved."*

3.88 *Delete Section 11.3.2 and substitute the following:*

11.3.2 BOILER AND MACHINERY INSURANCE
The Contractor shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall both be named insureds.

3.89 *Delete Section 11.3.3 and substitute the following:*

11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. To the extent any losses are covered and paid for by such insurance, the Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

3.90 *Delete Section 11.3.4 and substitute the following:*

11.3.4 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.

3.91 *Delete the language of Section 11.3.5 and substitute the word "Reserved."*

3.92 *Delete Section 11.3.6 and substitute the following:*

11.3.6 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 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Owner.

3.93 *Delete the first sentence of Section 11.3.7 and substitute the following:*

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent the property insurance provided by the Contractor pursuant to this Section 11.3 covers and pays for the damage, except such rights as they have to proceeds of such insurance held by the Contractor as fiduciary.

3.94 *Delete the first sentence of Section 11.3.8 and substitute the following:*

A loss insured under the Contractor's property insurance shall be adjusted by the Contractor 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 11.3.10.

3.95 *Delete Section 11.3.9 and substitute the following:*

11.3.9 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.

3.96 *Delete Section 11.3.10 and substitute the following:*

11.3.10 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Contractor's exercise of this power; if such objection is made, the dispute shall be resolved in the manner provided in the contract between the parties in dispute as the method of binding dispute resolution. The Contractor as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with a final order or determination issued by the appropriate authority having jurisdiction over the dispute.

3.97 *Delete Section 11.4.1 and substitute the following:*

11.4.1 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 written on Form SE-357, "Labor and Material Payment Bond", and both shall be made payable to the Owner.

3.98 *Delete Section 11.4.2 and substitute the following:*

11.4.2 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.

3.99 *Add the following Sections 11.4.3 and 11.4.4:*

11.4.3 Any bonds required by this Contract shall meet the requirements of the South Carolina Code of Laws and Regulations, as amended.

11.4.4 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.

3.100 *Delete Section 12.1.1 and substitute the following:*

12.1.1 If a portion of the Work is covered contrary to the to 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 and be replaced at the Contractor's expense without change in the Contract Time.

3.101 *In Section 12.2.2.1, delete the words "and to make a claim for breach of warranty" at the end of the third sentence.*

3.102 *In Section 12.2.2.3, add the following to the end of the sentence:*

unless otherwise provided in the Contract Documents.

3.103 *Insert the following at the end of Section 12.2.4:*

If, prior to the date of Substantial Completion, 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.

3.104 *Delete Section 13.1 and substitute the following:*

13.1 GOVERNING LAW

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.

3.105 *Delete Section 13.2, including its Sub-Sections 13.2.1 and 13.2.2, and substitute the following:*

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

3.106 *Delete Section 13.3 and substitute the following:*

13.3 WRITTEN NOTICE

Unless otherwise permitted herein, all notices contemplated by the Contract Documents shall be in writing and shall be deemed given:

.1 upon actual delivery, if delivery is by hand;

.2 upon receipt by the transmitting party of confirmation or reply, if delivery is by electronic mail, facsimile, telex or telegram;

.3 upon receipt, if delivery is by the United States mail.

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 this paragraph.

3.107 *In Section 13.4.1, insert the following at the beginning of the sentence:*

Unless expressly provided otherwise,

3.108 *Add the following Section 13.4.3:*

13.4.3 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
7.6 Cost or Pricing Data
11.1 Contractor's Liability Insurance
11.4 Performance and Payment Bond
15.1.6 Claims for Listed Damages
15.1.7 Waiver of Claims Against the Architect
15.6 Dispute Resolution
15.6.5 Service of Process

3.109 *Delete Section 13.6 and substitute the following:*

13.6 INTEREST

Payments due to the Contractor and unpaid under the Contract Documents shall bear interest only if and to the extent allowed by Title 29, Chapter 6, Article 1 of the South Carolina Code of Laws. 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.

3.110 *Delete the language of Section 13.7 and substitute the word "Reserved."*

3.111 *Add the following Sections 13.8 through 13.16:*

13.8 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,.

13.9 INTERPRETATION OF BUILDING CODES

As required by Title 10, Chapter 1, Section 180 of the South Caroline Code of Laws, as amended, 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.

13.10 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.

13.11 SEVERABILITY

If any provision or any part of a provision of the Contract Documents shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, 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.

13.12 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 subcontractors 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-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at www.procurement.sc.gov)

13.13 SETOFF

The Owner shall have all of its common law, equitable, and statutory rights of set-off.

13.14 DRUG-FREE WORKPLACE

The Contractor certifies to the Owner that Contractor will provide a Drug-Free Workplace, as required by Title 44, Chapter 107 of the South Carolina Code of Laws, as amended.

13.15 FALSE CLAIMS

According to the S.C. Code of Laws § 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.

13.16 NON-INDEMNIFICATION:

Any term or condition is void to the extent it requires the State to indemnify anyone. 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)

3.112 *Delete Section 14.1.1 and substitute the following:*

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 or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires substantially all Work to be stopped; or

.2 An act of government, such as a declaration of national emergency that requires substantially 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

3.113 *Insert the following at the end of Section 14.1.3:*

Any adjustment to the Contract Sum pursuant to this Section shall be made in accordance with the requirements of Article 7.

3.114 *In Section 14.1.4, replace the word "repeatedly" with the word "persistently."*

3.115 *Delete Section 14.2.1 and substitute the following:*

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 for materials or labor in accordance with the Contract Documents and the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

3.116 *In Section 14.2.2, delete the parenthetical statement ", upon certification by the Initial Decision Maker that sufficient cause exists to justify such action," immediately following the word "Owner" in the first line.*

3.117 *In Section 14.2.4, replace the words "Initial Decision Maker" with the word "Architect"*

3.118 *Add the following Section 14.2.5:*

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, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Owner under Section 14.4.

3.119 *Delete the second sentence of Section 14.3.2 and substitute the following:*

Any adjustment to the Contract Sum made pursuant to this section shall be made in accordance with the requirements of Article 7.3.3.

3.120 *Delete Section 14.4.1 and substitute the following:*

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 written notice of the termination to the Contractor specifying the part of the Contract terminated and when termination becomes effective.

3.121 *Delete Section 14.4.2 and substitute the following:*

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

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;

.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.

3.122 *Delete Section 14.4.3 and substitute the following:*

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, costs incurred by reason of such termination, and any other adjustments otherwise allowed by the Contract. Any adjustment to the Contract Sum made pursuant to this Section 14.4 shall be made in accordance with the requirements of Article 7.3.3.

3.123 *Add the following Sections 14.4.4, 14.4.5, and 14.5:*

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:

.1 the termination was due to withdrawal of funding by the General Assembly, Governor, or Budget and Control Board 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.

14.5 CANCELLATION AFTER AWARD BUT PRIOR TO PERFORMANCE

Pursuant to Title 11, Chapter 35 and Regulation 19-445.2085 of the South Carolina Code of Laws and Regulations, as amended, this contract may be canceled after award but prior to performance.

3.124 *Insert the following sentence after the second sentence of Section 15.1.1:*

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.

3.125 *Delete Section 15.1.2 and substitute the following:*

15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the 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 arising prior to the date final payment is due must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later except as stated for adverse weather days in Section 15.1.5.2. By failing to give written notice of a Claim within the time required by this Section, a party expressly waives its claim.

3.126 *Delete Section 15.1.3 and substitute the following:*

15.1.3 CONTINUING CONTRACT PERFORMANCE

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. The Architect will issue Certificates for Payment in accordance with the initial decisions and determinations of the Architect.

3.127 *Insert the following at the end of Section 15.1.5.1:*

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.

3.128 *Insert the following Sub-Sections at the end of Section 15.1.5.2:*

.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.

3.129 *Delete Section 15.1.6 and substitute the following:*

15.1.6 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.

15.1.6.1 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 13.6 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency.

15.1.6.2 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 13.6 (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.

15.1.6.3 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).

3.130 *Add the following Section 15.1.7:*

15.1.7 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).

3.131 ***Delete the language of Sections 15.2, 15.3, and 15.4, including all Sub-Sections, and substitute the word "Reserved" for the deleted language of each Section and Sub-Section.***

3.132 *Add the following Sections 15.5 and 15.6 with their sub-sections:*

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 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, 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 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 State's 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, 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.

3.133 *Add the following Article 16:*

ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION

16.1. Inspection Requirements: *(Indicate the inspection services required by the Contract)*

☐ Special Inspections are required and are not part of the Contract Sum. *(see section 01400)*
☒ Building Inspections are required and are not part of the Contract Sum. *(see section 01400)*
The inspections required for this Work are:

(Indicate which services are required and the provider)

☐ Civil: _____
☐ Structural: _____
☐ Mechanical: _____
☐ Plumbing: _____
☐ Electrical: _____
☐ Gas: _____
☐ Other *(list):* _____

Remarks: All inspections to be provided by the Owner

16.1.1 Contractor shall schedule and request inspections in an orderly and efficient manner and shall notify the Owner whenever the Contractor schedules an inspection in accordance with the requirements of Section 16.1. 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.

16.2 List Cash Allowances, if any. *(Refer to attachments as needed* If *none, enter NONE)*

n/a

16.3. Requirements for Record Drawings, if any. *(Refer to attachments as needed.* If *none, enter NONE)*

Provide electronic copies of as-built drawings at the conclusion of the project as part of the close-out document submittal. Also refer to Project Manual, Section 017839 'Project Record Documentation

16.4. Requirements for Shop Drawings and other submittals, if any, including number, procedure for submission, list of materials to be submitted, etc. *(Refer to attachments as needed. If none, enter NONE)*

Reference Project manual section that has this information

16.5. Requirements for signage, on-site office or trailer, utilities, restrooms, etc., in addition to the Contract, if any. *(Refer to attachments as needed. If none, enter NONE)*

Refer to Project Manual, Section 015000 'Temporary Facilities and Controls'

16.6. Requirements for Project Cleanup in addition to the Contract, if any. *(Refer to attachments as needed. If none, enter NONE)*

Refer to Project Manual, Section 017700 'Closeout Procedures'

16.7. List all attachments that modify these General Conditions. *(If none, enter NONE)*
None

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. Where it is necessary to jump curbs, dimensional lumber and plywood must be built up to appropriate curb elevation to protect curbs from damage. Contractor will be responsible for any project related damage.

7. The Contractor shall be responsible for erosion and sediment control measures where ground disturbances are made.

PROJECT FENCING

8. 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.

9. 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.

10. 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-visibility fencing equal to 'Kryptonight' by Tenax. Safety fencing shall be erected and maintained in a neat and orderly fashion throughout the project.

11. 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

12. Fraternization between Contractor's employees and USC students, faculty or staff is strictly prohibited.

13. 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.

14. Contractor's employees must adhere to the University's policy of maintaining a drug-free and tobacco-free campus. Tobacco product trash that is found on the jobsite may result in a $25/piece fee.

HAZARDOUS MATERIALS & SAFETY COMPLIANCE

15. A USC Permit to Work must be signed prior to any work being performed by the general contractor or sub-contractor(s).

16. The contractor will comply with all regulations set forth by OSHA, EPA 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.

17. 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.

18. 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

19. 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.

20. 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.

21. No entry, vehicle parking, or materials storage will be allowed inside the tree protection zone. A 4" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.

22. 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.

23. 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").

24. 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.

25. Any damage to existing pavements or landscaping (including lawn areas and irrigation) will be remediated before final payment is made.

TEMPORARY FACILITIES

26. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.

27. Contractor must provide its own electrical power supply. Water may be available to the extent of existing sources. Any needed or desired taps, connections, or metering devices, shall be at the sole expense of the contractor.

28. 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

29. 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

30. 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

31. 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.

32. 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 this is completed.

CAMPUS VEHICLE EXPECTATIONS

33. 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.

34. 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.

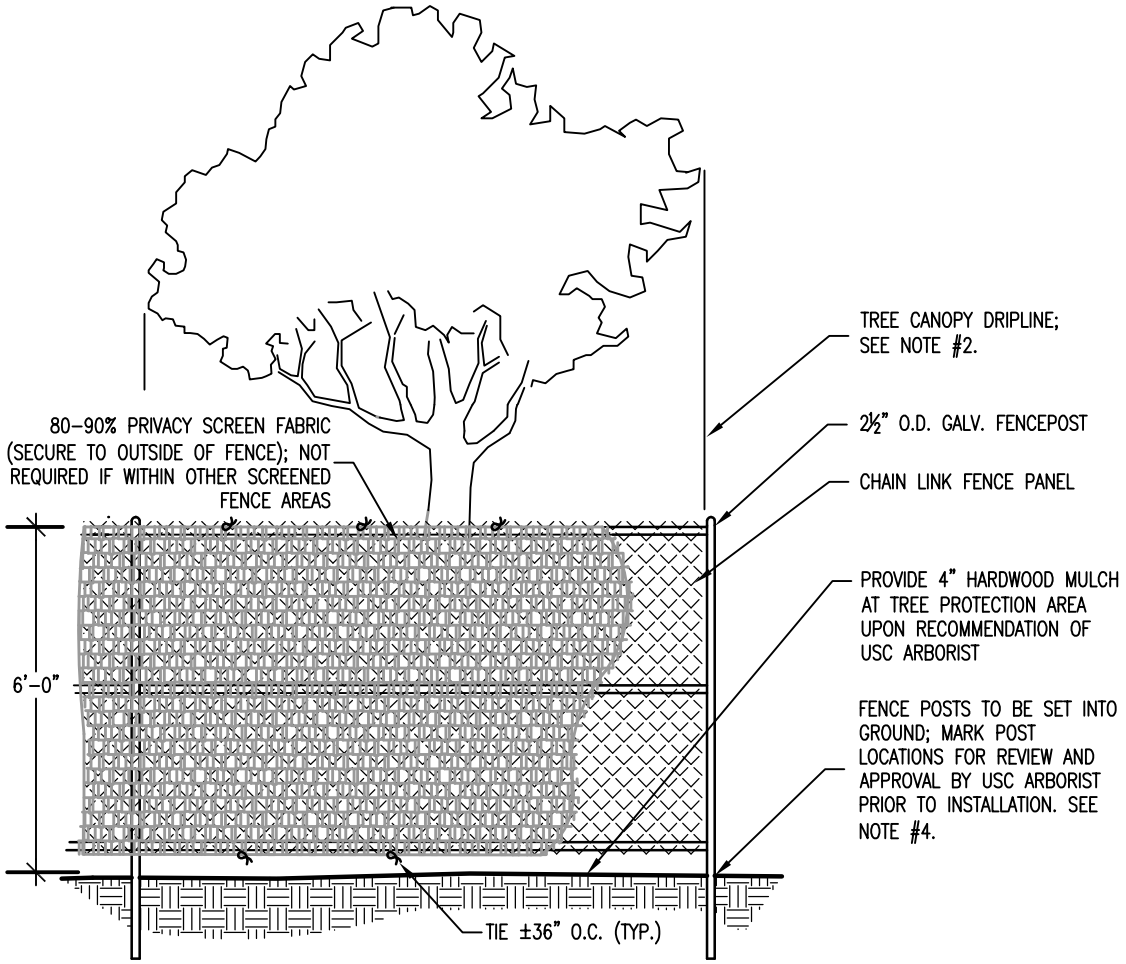
35. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.

36. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held responsible for damages and restoration expense.

37. 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.

38. All drivers of equipment and vehicles shall be respectful of University landscape, equipment, structures, fixtures and signage.

39. All incidents of property damage shall be reported to Parking Services or the Work Management Center.



NOTES:

1. 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.

TREE PROTECTION FENCING (IN–GROUND) WITH SCREENING

NO SCALE REVISED 8.28.14

SE-355
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____

Address: _____

_____

hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____

Address: _____

_____

hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Agency)*

Name: University of South Carolina

Address: 743 Greene Street

Columbia, SC 29208

hereinafter referred to as "Agency", or its successors or assigns, the sum of _____ ($), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Agency to construct

State Project Name: USC DM12 Humanities CR Elevators/Machine Room

State Project Number: H27-6100-H

Brief Description of Awarded Work, as found on the SE-330 or SE-332, Bid Form: Alteration of two (2) geared elevators and construction of rated, conditioned machine room enclosure.

in accordance with Drawings and Specifications prepared by *(Insert full name and address of A-E)*

Name: The Boudreaux Group

Address: P.O. Box 5695

Columbia, SC 29250

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ day of _____, 2_____
(shall be no earlier than Date of Contract)

BOND NUMBER _____

CONTRACTOR	**SURETY**
By: _____ **(Seal)**	**By:** _____ **(Seal)**
Print Name: _____	**Print Name:** _____
Print Title: _____	**Print Title:** _____ *(Attach Power of Attorney)*
Witness: _____	**Witness:** _____

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

SE-355
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

KNOW ALL MEN BY THESE PRESENTS, that *(Insert full name or legal title and address of Contractor)*

Name: _____

Address: _____

_____

hereinafter referred to as "Contractor", and *(Insert full name and address of principal place of business of Surety)*

Name: _____

Address: _____

_____

hereinafter called the "surety", are jointly and severally held and firmly bound unto *(Insert full name and address of Agency)*

Name: University of South Carolina

Address: 743 Greene Street

Columbia, SC 29208

hereinafter referred to as "Agency", or its successors or assigns, the sum of _____ ($), being the sum of the Bond to which payment to be well and truly made, the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Agency to construct

State Project Name: USC DM12 Humanities CR Elevators/Machine Room

State Project Number: H27-6100

Brief Description of Awarded Work, as found on the SE-330 or SE-332, Bid Form: Alteration of two (2) geared elevators and construction of rated, conditioned machine room enclosure.

in accordance with Drawings and Specifications prepared by *(Insert full name and address of A-E)*

Name: The Boudreaux Group, Inc.

Address: P.O. Box 5695

Columbia, SC 29250

which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract.

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, subject to the terms stated herein, do each cause this Labor and Material Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

DATED this _____ day of _____, 2_____
(shall be no earlier than Date of Contract)

BOND NUMBER _____

CONTRACTOR	**SURETY**
By: _____ **(Seal)**	**By:** _____ **(Seal)**
Print Name: _____	**Print Name:** _____
Print Title: _____	**Print Title:** _____ *(Attach Power of Attorney)*
Witness: _____	**Witness:** _____

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

LABOR AND 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.:**_____

CHANGE ORDER TO CONSTRUCTION CONTRACT

AGENCY: University of South Carolina

PROJECT NAME: USC DM12 Humanities CR Elevators/Machine Room

PROJECT NUMBER: H27-6100-H

CONTRACTOR: _____ **CONTRACT DATE:** _____

This Contract is changed as follows: *(Insert description of change in space provided below)*

ADJUSTMENTS 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

ADJUSTMENTS 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.	**New Substantial Completion Date:**		

CONTRACTOR ACCEPTANCE:

BY:_____ **Date:**_____
(Signature of Representative)

Print Name:_____

ARCHITECT RECOMMENDATION FOR ACCEPTANCE:

BY:_____ **Date:**_____
(Signature of Representative)

Print Name:_____

AGENCY ACCEPTANCE AND CERTIFICATION:

BY:_____ **Date:**_____
(Signature of Representative)

Print Name:_____

☐ Change is within Agency Construction Contract Change Order Certification of: $_____

☐ Change is not within Agency Construction Contract Change Order Certification of: $_____

Office of the State Engineer Authorization for change exceeding Agency Construction Contract Change Order1234 Certification:

AUTHORIZED BY:_____ **DATE:** _____
(OSE Project Manager)

SECTION 001010 - INDEX OF DRAWINGS

T1.1	TITLE SHEET, CODE STANDARDS, LOCATION MAP, SYMBOLS, INDEX OF DRAWINGS

ARCHITECTURAL

A1.1	5TH FLOOR PLAN, SECTIONS, INT. ELEVATIONS, NOTES & LEGEND

MECHANICAL

M1.1	FLOOR PLAN, DETAILS, NOTES, SCHEDULES, AND LEGEND

ELECTRICAL

E1.0	PENTHOUSE ELECTRICAL PLANS & SYMBOL LEGEND
E2.0	LOWER FLOORS ELECTRICAL PLANS

The Boudreaux Group

1330 Lady Street, Suite 500 (29201)
Post Office Box 5695
Columbia, South Carolina 29250
Phone: 799-0247
Fax: 771-6844

REQUEST FOR ELECTRONIC DWG FILES

DATE:

FROM: Name: _____

Address: _____

E-mail address: _____

PROJECT: **USC DM12 Humanities CR Elevators/Machine Room**

In order to process requests for electronic DWG file(s) return this form to The Boudreaux Group. Please indicate the sheet number for each sheet requested.

THE BOUDREAUX GROUP AS AUTHOR OF THE ORIGINAL ELECTRONIC FILE HAS PREPARED THE FILE FOR SOLE USE AS A BID DOCUMENT. ANY USE OF THIS FILE, EITHER ALL OR IN-PART, FOR OTHER THAN ITS INITIAL USE AS A BID DOCUMENT SHALL BE FULL AND SUFFICIENT CAUSE TO HOLD THE BOUDREAUX GROUP AS AUTHOR OF THE ORIGINAL ELECTRONIC FILE HARMLESS AGAINST ANY CLAIM OR LIABILITY RESULTING FROM ANY DISCREPANCY, ERROR OR OMISSION IN THE FILE'S ORIGINAL OR MODIFIED FORM.

AKNOWLEDGED
AND SIGNED BY: _____

SHEET(S) REQUESTED: _____

_____

_____

_____

_____

_____

SECTION 010070 - SPECIAL CONDITIONS

PART 1 – GENERAL

1.2 PERSONS AUTHORIZED TO SIGN DOCUMENTS

A. Contractor shall, within five (5) days after a notification of award or prior to execution of a contract, whichever is earliest, file with Architect a list of all persons in his firm who are authorized to sign documents such as contracts, certificates, and affidavits on behalf of the firm and except that in the case of a corporation he shall file with Architect a certified copy of a resolution of the Board of Directors of the corporation in which is listed the personnel of such corporation, with their title, who are authorized to sign documents on behalf of the corporation to all the conditions and provisions of such documents.

1.3 APPROVAL, BY ARCHITECT, OF SUBSTITUTE MATERIALS AND EQUIPMENT

A. Approval, by the Architect, of substitute materials and equipment shall not relieve the Contractor from his responsibility to supply and install any additional materials, equipment, or labor required to make the substitution properly function within the intent of the contract documents, as issued for Bid, whether or not such additional materials, equipment or labor are shown on the data submitted with the request for approval and whether or not recognized by the Architect or Contractor. The Contractor shall supply and install such required additional material, equipment or labor solely at his own expense and at no additional cost to the Owner.

1.4 PRE-CONSTRUCTION CONFERENCE

A. Owner and Architect will administer pre-construction conference for execution of scheduling, items relating to Owner-Contractor agreement and exchange of submittals. The pre-construction conference will be held at the project prior to commencement of work. Contractor to provide a full list of subcontractors at this time.

B. Owner and Architect will administer mobilization conference as part of the pre-construction conference for clarification of Owner and Contractor responsibilities in use of site and review of administrative procedures.

1.5 PROGRESS MEETINGS

A. The Contractor shall schedule and administer project meetings throughout progress of the work.

B. The Contractor shall make physical arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to Architect, participants, and those affected by decisions made at meetings.

C. Attendance: Job Superintendent; major Subcontractors and Suppliers; Owner and Architect as appropriate to agenda topics for each meeting.

D. Suggested Agenda: Review of work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions,

and other items affecting progress of work.

1.6 PREINSTALLATION CONFERENCES

A. When required in individual specification Section, convene a preinstallation conference prior to commencing work of the Section.

B. Require attendance of entities directly affecting, or affected by, work of the Section.

C. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.7 PRODUCT DATA

A. Submit only pages that are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to specification section and article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable to the work. Delete information not applicable.

C. Submit number of copies of product data Contractor requires, plus three copies that will be retained by Architect, Engineer and Owner.

1.8 SAMPLES

A. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified for custom finishes, indicating colors, textures, and patterns, for Architect selection. The Architect will coordinate colors of finish materials. When requested by the Architect, submit finish samples for related work necessary to the coordination of colors. Review of approval of any finish will commence only upon receipt of requested related finishes.

B. Submit samples to illustrate functional characteristics of products including parts and attachments. Submit number of samples required by individual specification section.

C. Label each sample with identification required for transmittal letter. Submit under AIA G810 or Architect/Engineer accepted form with transmittal letter. Identify project by title and number; identify contract by number. Identify work and product by specifications section and article number.

D. Do not fabricate products or begin work that requires submittals until return of submittal with Architect acceptance.

1.9 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect before proceeding.

1.10 MANUFACTURER'S CERTIFICATES

A. When required by individual specifications section, submit manufacturer's certificate in duplicate, that products meet or exceed specified requirements. General Contractor is solely responsible for securing manufacturer's certificates. Inability to provide certification shall be grounds for rejection of the product. General Contractor shall provide a certifiable substitute at no additional cost to the Owner.

1.11 RECEIVING MATERIALS FURNISHED BY OTHERS

A. Whenever Contractor or any Subcontractor shall receive items from another Contractor or from Owner for storage, erection or installation, Contractor or Subcontractor receiving such items shall give receipts for items delivered, and thereafter will be held responsible for care, storage, and any necessary replacing item or items received. No adjustment will be made to contract price for increased insurance premiums, except for materials and/or equipment furnished by Owner and not listed as such in other Contract Documents.

1.12 MANUFACTURERS' FIELD SERVICES

A. When specified in respective specification sections, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, and to make appropriate recommendations. Representative shall submit written report to Architect listing observations and recommendations.

1.13 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.14 CONSTRUCTION SET OF DRAWINGS AND PROJECT MANUAL

A. The Architect/Engineer will incorporate all Addendum items into the Drawings and Project Manual to produce a Construction Set of Drawings and Project Manual with all revisions clearly identified, including the Addendum under which the revisions were made. The Contractor should include in his bid the cost of printing three (3) Construction Sets of the Drawings and Project Manuals which will include the incorporation of all Addendum items issued during the bidding period. These

Construction Sets are to be used by the General Contractor and the Major Subcontractors as the official field and office sets and for the completion of as-built drawings. **The cost of printing three (3) construction sets can be estimated at $75 per set. The contractor is to pay the actual cost directly to printer selected by the Architect where quality control of printing is being monitored.**

1.15 PACKAGING, TRANSPORTATION

A. Require supplier to package products in boxes or crates for protection during shipment, handling and storage. Protect sensitive products against exposure to elements and moisture. Protect sensitive equipment and finishes against impact, abrasion and other damage.

1.16 DELIVERY AND RECEIVING

A. Arrange deliveries of products in accordance with construction progress schedules. Allow time for inspection prior to installation.

B. Coordinate deliveries to avoid conflict with work and conditions at site; work of other Contractors, or Owner; limitations on storage space; availability of personnel and handling equipment; and Owner's use of premises.

C. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.

D. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.

E. Immediately on delivery, inspect shipment to assure:

1. Product complies with requirements of Contract Documents and requirements of Contract.
2. Quantities are correct.
3. Accessories and installation hardware are correct.
4. Containers and packages are intact and labels legible.
5. Products are protected and undamaged.

1.17 PRODUCT HANDLING

A. Provide equipment and personnel to handle products, including those provided by Owner, by methods to prevent soiling and damage.

B. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging and surrounding surfaces.

C. Handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.19 REQUEST FOR ELECTRONIC FILES

A. Contractor is responsible for identifying the exact sheet(s) requested for reproduction by sheet number (s) using the attached form "Request for Electronic Dwg. Files" completed and signed.

B. Upon receipt of the completed and signed Request for Electronic Dwg. File form, the Architect will forward to the subcontractor within 5 business days the electronic CADD files on CD or transmitted via Email or across a FTP (file transfer) site as is convenient to the subcontractor.

1.20 PERMITS AND FEES

A. USC will issue the Building Permit. There will not be a cost to the Contractor.

B. The Contractor is required to obtain, at its own cost all State and City of Columbia business licenses.

END OF SECTION 010070

(Attachments)

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work under separate contracts.
5. Purchase contracts.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.
9. Specification and drawing conventions.
10. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: University of South Carolina, DM12 Humanities CR Elevators/Machine Room, State Project No. H27-6100.

1. Project Location: Humanities Classroom Building, Pickens Street, Columbia, SC 29208.

B. Owner: University of South Carolina, Columbia, South Carolina.

1. Owner's Representative: Christian, USC Campus Planning and Construction, 743 Green Street, Columbia, South Carolina, 29208.

C. Architect: The Boudreaux Group Inc, P.O. Box 5695 Columbia, SC 29250 (1330 Lady Street, Suite 500, Columbia, SC 29201)

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. The work includes all the work indicated by the Bid Documents, including Drawings and Project Manual, for the University of South Carolina, DM12 Humanities CR Elevators/Machine Room, dated 4/30/15.

B. Type of Contract:

1. Project will be constructed under a single prime contract. Refer to the DRAFT of the AIA Standard Form of Agreement between the Owner and Contractor included in the Project Manual.

1.5 WORK PROVIDED BY OWNER AND UNDER SEPARATE CONTRACTS

A. General: Cooperate fully with separate contractors providing concurrent work; separate vendors providing owner furnished and owner installed items; and with owner self-performing work, so work on those contracts and the owner performed work may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed by the owner and under separate contracts.

B. Concurrent Work: Owner will award separate contract(s) or perform the work themselves for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.

1. Installation of security cameras.

1.6 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Use of Site: Limit use of Project site to penthouse of Humanities Classroom Building and the minimal amount of lobby area as needed to perform cab work. Do not disturb portions of Project site beyond areas in which the Work is indicated. The building entrance and one elevator must be accessible at all times.

C. Condition of Existing Building: Maintain existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations.

1.7 PHASED CONSTRUCTION

A. The Work shall be conducted in one phase.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. One elevator must be operational at all times.

2. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Coordinate with Owner

C. Existing Utility Interruptions: Do not interrupt utilities serving adjacent facilities occupied by Owner or others unless permitted under the following conditions.

1. Notify Architect and Owner not less than 10 days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect and Owner not less than three days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. 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:

1. Imperative mood and streamlined language are generally used in the Specifications. 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.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

2. Abbreviations: Materials and products are identified by abbreviations. Industry standard abbreviations are used and abbreviations are indicated on the cover sheets and other general drawing sheets under each discipline.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

B. Related Sections include the following:

1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 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."

1.4 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 for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and

finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to 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.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use forms identified in the Contract, including General and Supplementary Conditions.

1. All Change Orders shall be submitted on Form SE-380 "Construction Change Order" with appropriate documentation attached.

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 forms identified in the Contract, including General and Supplementary Conditions.

1. Refer to 00811-OSE article 3.68

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Work Change Directive: Architect may issue a Work Change Directive on forms **AIA Document G714.** Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Work 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 Work 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 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

B. Related Sections include the following:

1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Correlate line items in the Schedule of Values with Application for Payment forms with Continuation Sheets.

1. Submit the Schedule of Values to Architect with initial Applications for 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 Technical 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. Submit draft of AIA Document G703 Continuation Sheets.

3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of the Work.
c. Change Orders (numbers) that affect value.
d. Dollar value.

1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. 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 several line items for principal subcontract amounts, where appropriate.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. 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.

a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.

7. 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.
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.

1.5 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.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets 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.

E. Transmittal: Submit 3 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.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. When an application shows completion of an item, submit final or full waivers.
2. Owner reserves the right to designate which entities involved in the Work must submit waivers.
3. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
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
4. Products list.
5. List of Contractor's staff assignments.
6. List of Contractor's principal consultants.
7. Copies of building permits.
8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
9. Initial progress report.
10. Report of preconstruction conference.
11. 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.

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, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Interpretation (RFIs).

B. Related Sections include the following:
1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 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.

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.

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. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.5 SUBMITTALS

A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other contractors.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. 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: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule 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. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All 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:

    a. Tentative construction schedule.
    b. Critical work sequencing and long-lead items.
    c. Designation of key personnel and their duties.
    d. Procedures for processing field decisions and Change Orders.
    e. Procedures for RFIs.
    f. Procedures for testing and inspecting.
    g. Procedures for processing Applications for Payment.
    h. Distribution of the Contract Documents.
    i. Submittal procedures.
    j. Preparation of Record Documents.
    k. Use of the premises and existing building.
    l. Work restrictions.
    m. Owner's occupancy requirements.
    n. Responsibility for temporary facilities and controls.
    o. Construction waste management and recycling.
    p. Parking availability.
    q. Office, work, and storage areas.
    r. Equipment deliveries and priorities.
    s. First aid.
    t. Security.
    u. Progress cleaning.
    v. Working hours.

3. Minutes: Record and distribute meeting minutes.

C. Progress Meetings: Conduct progress meetings at biweekly appropriate intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. 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.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) RFIs.
16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.8 REQUESTS FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned 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 interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. Name of Architect.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
10. Contractor's signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

    a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

C. Hard-Copy RFIs:

1. Identify each page of attachments with the RFI number and sequential page number.

D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.

1. Attachments shall be electronic files Adobe Acrobat PDF format and in Word format with area on the form for Architect/Engineer’s response

E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFIs received 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 RFIs with numerous errors.

2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.

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 in accordance with the requirements and general provisions of the Contract, including General and Supplementary Conditions.

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.

F. 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.

G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at meetings.

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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Field condition reports.
3. Special Reports

B. Related Sections include the following:
1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

G. Major Area: A story of construction, a separate building, or a similar significant construction element.

H. Milestone: A key or critical point in time for reference or measurement.

I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.4 SUBMITTALS

A. Contractor's Construction Schedule: Submit three opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

B. Field Condition Reports: Submit two copies immediately upon discovery of field condition differences.

C. Special Reports: Immediately upon the occasion of an unusual event.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established from the Notice to Proceed to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include appropriate times for start up and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.

2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Subcontract awards.
b. Submittals.
c. Purchases.
d. Fabrication.
e. Sample testing.
f. Deliveries.
g. Installation.
h. Tests and inspections.
i. Adjusting.
j. Curing.
k. Startup and placement into final use and operation.

3. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

    a. Structural completion.
    b. Permanent space enclosure.
    c. Completion of mechanical installation.
    d. Completion of electrical installation.
    e. Substantial Completion.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Completion of each Major Activity and Substantial Completion.

F. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.2 REPORTS

A. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.3 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At intervals that are appropriate and when requested by Architect when there is evidence of the construction being behind schedule, no more often than monthly, update schedule to reflect actual construction progress and activities. Issue schedule when it is updated at regularly scheduled progress meetings.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 01 Section "Quality Requirements" for submitting test and inspection reports.
5. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
6. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals under the conditions and procedures indicated 010070 Special Conditions.

B. 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.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, 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 resubmittals.

1. Initial Review: Allow 10 working 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.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 5 working days for review of each resubmittal.
4. Concurrent Review: The following groups of submittals and samples are to be reviewed concurrently. The review period begins after all concurrent submittals have been received. Submittals are to include all submittals in these groups.
   a. Exterior Finishes
   b. Interior Finishes
   c. Electrical
   d. Plumbing
   e. Mechanical
   f. Fire Protection

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 4 by 6 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

   a. Project name.
   b. Date.
   c. Name and address of Architect
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Submittal number or other unique identifier, including revision identifier.
   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.
   l. Other necessary identification.

E. Deviations: Cloud and note or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Additional copies submitted for maintenance manuals will not be marked with action taken and will not be returned.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form containing the following information:

1. Transmittal Form: Provide locations on form for the following information:

a. Project name.
b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Drawing number and detail references, as appropriate.
j. Transmittal number
k. Submittal and transmittal distribution record.
l. Remarks.
m. Signature of transmitter.

2. Record and identify 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 label information as related submittal.

H. Resubmittals: Make resubmittals 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 "No Exceptions Taken or Make Corrections Noted”

I. 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.

J. Use for Construction: Use only final submittals clearly marked with Architect's submittal action stamp indicating the action indicated to be taken by Contractor and the Architect's signature and date on the submittal stamp.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. See Section 010070 Special Conditions.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

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 printed 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 written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operation and maintenance manuals.
k. Compliance with specified referenced standards.
l. Testing by recognized testing agency.
m. Application of testing agency labels and seals.
n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit five copies of Product Data, unless otherwise indicated. Architect will return four copies. Mark up and retain one returned copy as a Project Record Document. Submit One additional copy if submittal requires engineer's review.

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, unless submittal of Architect's CAD Drawings are otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Design calculations.
   j. Compliance with specified standards.
   k. Notation of coordination requirements.
   l. Notation of dimensions established by field measurement.
   m. Relationship to adjoining construction clearly indicated.
   n. Seal and signature of professional engineer if specified.
   o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

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 40 inches (750 by 1000 mm).
3. Number of Copies: Submit **four** copies of Submittal, unless otherwise indicated. Architect will return **three** copies. Mark up and retain one returned copy as a Project Record Document. Submit One additional copy if submittal requires engineer's review.

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:

   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's 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.

a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared 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.

a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; and will return one sample set.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.

F. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

G. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

H. 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 Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

4. Number of Copies: Submit two copies of subcontractor list, unless otherwise indicated. Architect will return one copy.

    a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit one copy of each submittal, unless otherwise indicated. Architect will retain the one copy.
2. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Product Test Reports: Prepare 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.

E. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

F. Compatibility Test Reports: Prepare 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.

G. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, 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.

H. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

I. Design Data: Prepare 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.

J. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

K. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

L. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

M. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

2.3 DELEGATED DESIGN

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 Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit four copies of a statement, 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.

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. 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. 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: The Architect will return to the contractor without examination shop drawings, product data and other required submittals, which have not been prepared according to contract requirements. 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 taken, as follows:
   1. No Exceptions Taken
   2. Make Corrections Noted
   3. Revise and Resubmit
   4. Rejected

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. Partial 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 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. 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. Related Sections include the following:

1. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. 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.

B. 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.

C. 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.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. 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.

F. 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.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. 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.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five 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.

1.5 SUBMITTALS

A. Reports: Prepare and submit certified written reports that include 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 reinspecting.

B. 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. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Quality-control services are the Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. 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.
2. Payment for these services will be made by the owner.
3. Retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be performed by the owner's testing agency and will be charged to Contractor.

B. Testing Agency Responsibilities: Cooperate with Architect 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.

C. 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:

1. 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. Preliminary design mix proposed for use for material mixes that require control by testing agency.
6. Security and protection for samples and for testing and inspecting equipment at Project site.

D. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 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 01 Section "Cutting and Patching."

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

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 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 Architect, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.

1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.

2. Indicate procedures for discarding water-damaged materials and replacing water-damaged Work.

1.5 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.

1.6 TEMPORARY FACILITIES

A. Field Offices, General: A field office is not required and the owner does not want a field office on site. The contractor is to utilize mobile phones and office equipment as may be needed and/or work remotely from the project site from Contractor's office.

1. USC will provide access to a conference room in the Humanities Classroom Building for construction meetings with the Architect and/or Owner.

B. Storage Sheds: Storage sheds are not required and the owner does not want storage sheds on site. Only deliver materials to site in a reasonable time frame ahead of installation. The Coliseum is reasonably secure. Remove equipment from the site at the end of each work day.

1. The owner takes no responsibility for materials delivered and stored on site awaiting installation or for equipment that may be stored or left on the site.

PART 2 - EXECUTION

2.1 TEMPORARY UTILITY INSTALLATION

A. General: Connect to existing service.

1. Arrange Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Sanitary Facilities: The restroom facilities of the Classroom Building can be used for toilet, and wash facilities for the construction personnel.

1. The contractor is to keep facilities clean at all times. At the end of construction the contractor is to restore any damage to the existing facilities back to their condition before start of construction. The contractor is photograph or video tape the existing restrooms to demonstrate their condition before construction started.

D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

E. Telephone Service: Provide the superintendent and project manager with a mobile phone for use on site.

1. At a conspicuous location on site provide a list of important telephone numbers protected from the weather.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Contractor's emergency after-hours telephone number.
e. Architect's office.
f. Engineers' offices.
g. Owner's office.
h. Principal subcontractors' field and home offices.

2.2 SUPPORT FACILITIES INSTALLATION

A. Temporary Use of Existing Roads and Paved Areas: Do not overload existing roads, curbs and paved areas with vehicle and equipment that will damage the roads, curbs and pavement and restore such pavement and surfaces to their original conditions after work is complete.

1. Repair any damage to existing roads, curbs and paved areas.
2. Remove any oil, sediment or other substance deposited by vehicle and equipment from roads and paved areas. Remove oil immediately.

B. Parking: Refer to USC Supplemental General Conditions for Construction Projects for parking availability and requirements.

C. Project Signs: Unauthorized signs are not permitted.

D. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Remove waste materials from Owner's property and legally dispose of them. Comply with progress cleaning requirements in Section 017300 "Execution."

1. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
2. Do not allow waste materials that are to be disposed of to accumulate on-site.
3. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
4. Do not burn waste materials.

2.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection 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.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Project Site: The existing penthouse will act as the main site perimeter. The contractor will be responsible for providing barricade at elevator opening. The barricade should only remain in place for the minimal amount of time necessary. Bring any concerns with the adequacy of this enclosure to prevent unauthorized entrance, vandalism, theft, and similar violations of security to the Architect and Owner's attention before proceeding.

1. The Owner will furnish the General Contractor with keys to access the building and penthouse. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Keys are not to be duplicated by the contractor. The owner will issue the number of keys to the Contractor that is reasonable and is needed by the Contractor. The Contractor is to return all the keys issued by the Owner when construction is complete. Keep the Coliseum secure at all times. If doors are to be left open for access that is necessary for construction then the entry way is to be monitored by the construction personnel to assure unauthorized access by the public, students or staff.

2.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of facilities to minimize waste and abuse, limit availability of facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

C. Termination and Removal: At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This 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; product substitutions; and comparable products.

B. Related Sections include the following:

1. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
2. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased 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.
2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

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

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," 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 other named manufacturers.

1.4 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. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified material or product cannot be provided.
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. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
i. 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 within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: Written Approval by Architect.

B. Comparable Product 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. 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 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: Action on Architect’s Submittal Stamp

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

1.5 QUALITY ASSURANCE

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

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. 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.
2. 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 ensure compliance with the Contract Documents and to ensure 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 above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
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.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 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: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate 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, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. 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. Where products are accompanied by the term "as selected," Architect will make selection.
4. Where products are accompanied by the term "match sample," sample to be matched is Architect's.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified 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 provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or

texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 20 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect/Owner.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner an advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. 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.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. 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 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Field engineering.
2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.

1.3 SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
3. If existing utilities are uncovered, Contractor can recover cost to relocate as required. Contractor can also recover cost to adjust new utilities to meet or conform with the existing utilities as required.

C. Acceptance of Conditions: 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. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings.. If discrepancies are discovered, notify Architect promptly.

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. Slope new pavement to follow slopes of the original pavement being replaced.

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.

F. 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.

G. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 materials more than 7 days during normal weather or 3 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.

D. Installed Work: Keep installed work clean. At Substantial Completion, 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: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

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. 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.

J. Special Conditions: The Coliseum project site and work areas must be cleaned before the August 11-20, 2014 work suspension. An event will be occurring in the arena at this time. The August 23rd work suspension is the result of an event on the concourse and does not carry the same requirement.

3.6 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.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

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.

END OF SECTION 017300

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Divisions 02 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. 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.

B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces 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.

1.5 WARRANTY

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

1. **The existing roof is under a Johns Manville warranty (ANM137206240). All roof penetrations are to be made by a JM Certified Contractor**

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials 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 match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. 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.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. 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 as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces.
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. Proceed with patching after construction operations requiring cutting are complete.

C. 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 possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 01 Section "Execution" for progress cleaning of Project site.
3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
5. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion electronic construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Remove construction equipment and temporary utility connections from Project site, along with construction tools, and similar elements.
8. Complete final cleaning requirements, including touchup painting.
9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, 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. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following (List exceptions in the request):

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in maintenance of products.
5. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
6. Submit consent of surety to final payment (AIA G707).
7. Submit Affidavit of Payment and Debts and Claims (AIA G706).
8. Submit letter on company letterhead stating project clean-up has been completed including removal of temporary facilities and debris.
9. Submit a final liquidated damages settlement statement.
10. Submit specific warranties, guarantees, workmanship bonds, maintenance agreements, final certifications, and similar documents.
13. Submit project record drawings and specifications, operation and maintenance manuals, damage or settlement surveys and similar final record information.
14. Deliver tools, spare parts, extra stock, and similar items.
15. Provide letter on company letterhead stating no asbestos containing material has been installed in the project.

16. Submit Certificate of Final Occupancy.

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. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
3. Note related change-order numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
5. Upon completion of construction, General Contractor and/or subcontractors shall turn over to Architect, a complete record set of drawings, showing all services exactly as built and installed. This includes a complete record of the exact manner in which electrical, piping and underground utilities, are installed. Dimensions shall be included where necessary to accurately locate piping and other items that will be below grade and that it may later be necessary to service.

B. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
3. Note related record drawing information and Product Data.
4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

C. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

F. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
5. Recommended "turn-around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

C. Preparation: Submit three copies of list. Include name and identification of each 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 areas in sequential order.
2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Architect.
d. Name of Contractor.
e. Page number.

1.7 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.

C. 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.

D. 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.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

    a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. **Clean new and existing surfaces. Clean exposed exterior surfaces where work has been performed free of stains, films, and similar foreign substances.** Avoid disturbing natural weathering of exterior surfaces.
f. Remove debris from limited access spaces.
g. Clean new and existing surfaces in project area.
h. Remove labels that are not permanent.
i. 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.
j. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:

1. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.

PART 2 - PRODUCTS

2.1 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 and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

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. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

C. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for general closeout procedures.
2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit two set(s) of marked-up record prints.

B. Record Specifications: Submit two paper copies of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit two paper copies of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

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, incorporating new and revised drawings as modifications are issued.

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 particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Locations and depths of underground utilities.
d. Revisions to routing of piping and conduits.
e. Locations of concealed internal utilities.
f. Changes made by Change Order or Construction Change Directive.
g. Changes made following Architect's written orders.
h. Details not on the original Contract Drawings.
i. Field records for variable and concealed conditions.
j. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as paper copy.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

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 revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in an 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 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.
3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Engineering Survey: Submit engineering survey of condition of building.

C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

D. Schedule of Selective Demolition Activities:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1. The existing roof is under a Johns Manville warranty (ANM137206240). All roof penetrations are to be made by a JM Certified Contractor.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is included in Appendix A of the Project Manual 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. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1. See Owner’s work restrictions schedule in Section 011000 – Summary.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

1. Comply with requirements specified in Section 013233 "Photographic Documentation."

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least 4 hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:

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. Coordinate delivery site with Owner.
5. Protect items from damage during transport and storage.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.9 SELECTIVE DEMOLITION SCHEDULE

A. Remove: Portion of concrete support beam, precast concrete seating platforms, existing guardrails, concrete block walls, doors, mechanical systems, plumbing systems and electrical systems as shown on drawings.

B. Existing to Remain: All structure, seating and guardrails not shown as part of demolition in Coliseum.

C. Dismantle: Existing individual seats in permanent seating area as identified on drawings and all retractable seating. Both types of seating will remain property of USC. Move to Park Street loading area for pick-up by State Surplus.

END OF SECTION 024119

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes through-penetration firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.

1.3 PERFORMANCE REQUIREMENTS

A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.

1. Fire-resistance-rated walls.

B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814 or UL 1479:

1. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
2. T-Rated Systems: For the following conditions, provide through-penetration firestop systems with T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed to potential contact with adjacent materials in occupiable floor areas:

a. Penetrations located outside wall cavities.
b. Penetrations located outside fire-resistance-rated shaft enclosures.

C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.

1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.

2. For floor penetrations with annular spaces exceeding 4 inches (100 mm) in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means.
3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.

D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

1.4 SUBMITTALS

A. Product Data: For each type of through-penetration firestop system product provided. For each through-penetration firestop system, show each kind of construction condition penetrated, relationships to adjoining construction, and kind of penetrating item. Include firestop design designation of testing and inspecting agency acceptable to authorities having jurisdiction that evidences compliance with requirements for each condition indicated.

1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.
2. Where Project conditions require modification of qualified testing and inspecting agency's illustration to suit a particular through-penetration firestop condition, submit illustration, with modifications marked, approved by through-penetration firestop system manufacturer's fire-protection engineer.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, through one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:

1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL, ITS or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
2. Through-penetration firestop systems are identical to those tested per testing standard referenced in "Part 1 Performance Requirements" Article. Provide rated systems complying with the following requirements:

    a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
    b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by the following:

1) UL in its "Fire Resistance Directory."
2) ITS in its "Directory of Listed Products."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.

B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.

C. Notify Architect at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.

D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by Architect and building inspector, if required by authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide through-penetration firestop systems for each application by one of the following manufacturers:

1. A/D Fire Protection Systems Inc.

2. Grace, W. R. & Co. - Conn.
3. Hilti, Inc.
4. Johns Manville.
5. Nelson Firestop Products.
6. NUCO Inc.
7. RectorSeal Corporation (The).
8. Specified Technologies Inc.
9. 3M; Fire Protection Products Division.
10. Tremco; Sealant/Weatherproofing Division.
11. USG Corporation.

2.2 FIRESTOPPING, GENERAL

A. Compatibility: Provide through-penetration firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

1. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated.

    a. Slag-/rock-wool-fiber insulation.
    b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
    c. Fire-rated form board.
    d. Fillers for sealants.

2. Temporary forming materials.
3. Substrate primers.
4. Collars.
5. Steel sleeves.

2.3 FILL MATERIALS

A. General: Provide through-penetration firestop systems for ratings indicated on drawings. UL Rated Design Assemblies proposed in product data submittal will indicate type of fill material used to achieve indicated ratings. Fill materials are those referred to in directories of referenced testing and inspecting agencies as "fill," "void," or "cavity" materials.

B. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.

C. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.

D. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.

E. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.

F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

G. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.

H. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.

I. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

J. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
   1. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

2.4 MIXING

A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of work.

   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with firestop system manufacturer's written instructions and with the following requirements:

1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.
2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.

B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.

C. Install fill materials for firestop systems by proven techniques to produce the following results:

1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

A. Identify through-penetration firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches (150 mm) of edge of the firestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:

1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
2. Contractor's name, address, and phone number.
3. Through-penetration firestop system designation of applicable testing and inspecting agency.
4. Date of installation.
5. Through-penetration firestop system manufacturer's name.
6. Installer's name.

3.5 CLEANING AND PROTECTING

A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce systems complying with specified requirements.

3.6 THROUGH-PENETRATION FIRESTOP SYSTEMS:

A. UL-classified systems are indicated, they refer to alpha-alpha-numeric designations listed in UL's "Fire Resistance Directory" under product Category XHEZ.

B. ITS-listed systems are indicated, they refer to design numbers listed in ITS's "Directory of Listed Products," "Firestop Systems" Section.

END OF SECTION 078413

SECTION 078446 - FIRE-RESISTIVE JOINT SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes fire-resistive joint systems for the following:
   1. Head-of-wall joints.

B. Related Sections include the following:
   1. Division 07 Section "Penetration Firestopping" for systems installed in openings in walls and floors with and without penetrating items.
   2. Division 07 Section "Joint Sealants" for non-fire-resistive joint sealants.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly in which fire-resistive joint systems are installed.

B. Joint Systems in and between Fire-Resistance-Rated Constructions: Provide systems with assembly ratings equaling or exceeding the fire-resistance ratings of construction that they join, indicated as determined by UL 2079.

   1. Load-bearing capabilities as determined by evaluation during the time of test.

C. For fire-resistive systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

1.4 SUBMITTALS

A. Product Data: For each type of product provided. For each fire-resistive joint system, show each kind of construction condition in which joints are installed and relationships to adjoining construction. Include fire-resistive joint system design designation of testing and inspecting agency acceptable to authorities having jurisdiction that demonstrates compliance with requirements for each condition.

   1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each fire-resistive joint system configuration for construction and penetrating items.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain fire-resistive joint systems, for each kind of joint and construction condition indicated, through one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Provide fire-resistive joint systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:

1. Fire-resistance tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or another agency performing testing and follow-up inspection services for fire-resistive joint systems acceptable to authorities having jurisdiction.
2. Fire-resistive joint systems are identical to those tested per methods indicated in Part 1 "Performance Requirements" Article and comply with the following:

    a. Fire-resistive joint system products bear classification marking of qualified testing and inspecting agency.
    b. Fire-resistive joint systems correspond to those indicated by referencing system designations of the qualified testing and inspecting agency.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver fire-resistive joint system products to Project site in original, unopened containers or packages with qualified testing and inspecting agency's classification marking applicable to Project and with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials for fire-resistive joint systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.

B. Ventilate fire-resistive joint systems per manufacturer's written instructions by natural means or, if this is inadequate, forced-air circulation.

1.8 COORDINATION

A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed according to specified requirements.

B. Coordinate sizing of joints to accommodate fire-resistive joint systems.

C. Notify Owner's inspecting agency at least seven days in advance of fire-resistive joint system installations; confirm dates and times on days preceding each series of installations.

D. Do not cover up fire-resistive joint system installations that will become concealed behind other construction until Owner's inspecting agency and building inspector of authorities having jurisdiction have examined each installation.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide fire-resistive joint systems for each application on Drawings by one of the following manufacturers or equal products by another manufacturer.

1. A/D Fire Protection Systems Inc.
2. DAP Inc.
3. Firestop Systems Inc.
4. Hilti, Inc.
5. International Protective Coatings Corp.
6. ISOLATEK International.
7. Nelson Firestop Products.
8. NUCO Industries.
9. RectorSeal Corporation (The).
10. Specified Technologies Inc.
11. 3M Fire Protection Products.
12. Tremco, Inc.
13. United States Gypsum Company.

2.2 FIRE-RESISTIVE JOINT SYSTEMS, GENERAL

A. Compatibility: Provide fire-resistive joint systems that are compatible with joint substrates, under conditions of service and application, as demonstrated by fire-resistive joint system manufacturer based on testing and field experience.

B. Accessories: Provide components of fire-resistive joint systems, including forming materials that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing and inspecting agency for systems indicated.

2.3 FIRE-RESISTIVE JOINT SYSTEMS

A. UL-classified fire-resistive joint systems refer to alphanumeric designations listed in UL's "Fire Resistance Directory" under product Category XHBN.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of work.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:

1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

B. Priming: Prime substrates where recommended in writing by fire-resistive joint system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent fill materials of fire-resistive joint system from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from fire-resistive joint system materials. Remove tape as soon as possible without disturbing fire-resistive joint system's seal with substrates or damaging adjoining surfaces.

3.3 INSTALLATION

A. General: Install fire-resistive joint systems to comply with Part 1 "Performance Requirements" Article and fire-resistive joint system manufacturer's written installation instructions for products and applications indicated.

B. Install forming/packing/backing materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

C. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:

1. Fill voids and cavities formed by openings and forming/packing/backing materials as required to achieve fire-resistance ratings indicated.

2. Apply fill materials so they contact and adhere to substrates formed by joints.
3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes and joint systems have been inspected by Architect and local authorities having jurisdiction.

3.4 FIELD QUALITY CONTROL

A. Remove and replace fire-resistive joint systems where inspections indicate that they do not comply with specified requirements.

B. Proceed with enclosing fire-resistive joint systems with other construction only after inspection reports are issued and fire-resistive joint systems comply with requirements.

3.5 CLEANING AND PROTECTING

A. Clean off excess fill materials adjacent to joints as Work progresses by methods and with cleaning materials that are approved in writing by fire-resistive joint system manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure fire-resistive joint systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.

END OF SECTION 078446

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
2. Division 09 Sections " Painting" for field painting hollow metal doors and frames.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings.

B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

C. Custom Hollow Metal Work: Hollow metal work fabricated according to ANSI/NAAMM-HMMA 861.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.

9. Details of conduit and preparations for intrusion detection system

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252.

1. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

C. Smoke-Control Door Assemblies: Comply with NFPA 105 and UL 1784.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to finish of factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (102-mm-) high wood blocking. Do not store in a manner that traps excess humidity.

1. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Recycled Content of Steel Products: Provide products with average recycled content of steel products such that postconsumer recycled content plus one-half of preconsumer recycled content is not less than 75 percent.

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratingsndicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.3 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amweld Building Products, LLC.
2. Benchmark; a division of Therma-Tru Corporation.
3. Ceco Door Products; an Assa Abloy Group company.
4. Curries Company; an Assa Abloy Group company.
5. Deansteel Manufacturing Company, Inc.
6. Firedoor Corporation.
7. Fleming Door Products Ltd.; an Assa Abloy Group company.
8. Habersham Metal Products Company.
9. Karpen Steel Custom Doors & Frames.
10. Kewanee Corporation (The).
11. Mesker Door Inc.
12. Pioneer Industries, Inc.
13. Security Metal Products Corp.
14. Steelcraft; an Ingersoll-Rand company.
15. Windsor Republic Doors.

2.4 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.

D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. (96- to 192-kg/cu. m) density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

G. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.5 HOLLOW METAL DOORS AND FRAMES

A. General: Provide Standard Hollow Metal Doors and Frames may be provided where Manufacturers standard hollow metal doors and frames meet requirements. Provide Custom Hollow Metal Doors and Frames where Manufacturers standard hollow metal doors and frames do NOT meet requirements.

2.6 STANDARD HOLLOW METAL DOORS

A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.

1. Design: Flush panel.
2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
3. Retain first subparagraph below for thermal-rated doors. Verify R-value with manufacturers. See Evaluations for discussion.
4. Square edge in first subparagraph below makes door nonhanded but limits amount of clearance adjustability during installation.

5. Vertical Edges for Single-Acting Doors: Manufacturer's standard.
6. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- (1.0-mm-) thick, end closures or channels of same material as face sheets.

7. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

B. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

2.7 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Interior Frames: Fabricated from cold-rolled steel sheet.

1. Fabricate frames with mitered or coped corners.
2. Fabricate frames as full profile welded unless otherwise indicated.
3. Frames for Wood Doors: 0.053-inch- (1.3-mm-) thick steel sheet.

C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.8 FRAME ANCHORS

A. Jamb Anchors:
1. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.9 STOPS AND MOLDINGS

A. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated.

2.10 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117 and ANSI/NAAMM-HMMA 861.

C. Fire Door Cores: as required to provide fire-protection ratings indicated in drawings.

D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
5. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.

6. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8 and ANSI/NAAMM-HMMA 861.
2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
2. Provide fixed frame moldings on outside of exterior frames.
3. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

2.11 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:

1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.

C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and HMMA 840.

1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

    a. At fire-protection-rated openings, install frames according to NFPA 80.
    b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    c. Install door silencers in frames before grouting.
    d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    e. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

    a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
2. Smoke-Control Doors: Install doors according to NFPA 105.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

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

D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed. All door hardware must be in compliance with ADA and ANSI A117.1.

B. This Section includes the following:

1. Hinges.
2. Lock cylinders and keys.
3. Bolts.
4. Push/pull units.
5. Closers.
6. Kick plates.
7. Weatherstripping for exterior doors.
8. Sweeps.
9. Thresholds.
10. ADA operators and actuators.

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

1. Division 8 Section "Hollow Metal Frames and Doors" for silencers integral with hollow metal frames.

1.3 DOOR HARDWARE

A. Door Hardware Selection: Furnish and Install door hardware indicated and in quantities indicated in door hardware schedule attached to this section and with hardware sets identified on door and frame schedule on the drawings.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.

B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

a. Type, style, function, size, and finish of each hardware item.
b. Name and manufacturer of each item.
c. Fastenings and other pertinent information.
d. Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
e. Explanation of all abbreviations, symbols, and codes contained in schedule.
f. Mounting locations for hardware.
g. Door and frame sizes and materials.
h. Keying information.

2. Submittal Sequence: Submit final schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.

D. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

B. Supplier Qualifications: An architectural door hardware supplier, with warehousing facilities in South Carolina, that can supply door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an architectural hardware consultant (AHC) with a minimum of five years experience who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.

C. Americans with Disabilities Act (ADA): Provide and install finish hardware in accordance with requirements of Americans with Disabilities Act (ADA). Specifically, comply with ADA sections relating to accessibility and usability.

D. Notification of Architect: Before installation of finish hardware, notify Architect of any Contract Document requirements that are suspected to be in noncompliance with ADA.

E. ANSI Standards for Physically Handicapped: Finish Hardware shall comply with: "American National Standard for Buildings and Facilities – Providing Accessibility and Usability for Physically Handicapped People" (ANSI A117.1-1986) 1986 edition, by American National Standards Institute, Inc.; New York, New York. Before installation of finish hardware, Notify Architect of any Contract Document requirements that are suspected to be in noncompliance with ANSI A117.1-1986. In addition, before installation of finish hardware, notify Architect of conflicting requirements of ADA and ANSI A117.1-1986.

1.6 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule.

B. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.7 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

1.8 SUBMITTALS:

A. Product Data: Submit manufacturers technical product data for each item of hardware in accordance with Division-1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.

B. Vertical Hardware Schedule: Submit final hardware schedule in manner indicated below. Coordinate hardware with doors, frames, and related work to ensure proper size, thickness, hand, function and finish of hardware.

1. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

a. Type, style, function, size and finish of each hardware item.
b. Name and manufacturer of each item.

c. Fastening and other pertinent information.
d. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door schedule.
e. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
f. Door and frame sizes and materials.
g. Keying information.

C. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordination review of hardware schedule.

D. Templates: Furnish hardware templates to each fabricator of doors, frames, and other work being factory-prepared for the installation of hardware. Upon request, check shop drawings of other such others work to confirm that adequate provisions are made for proper location and installation of hardware.

E. Operations and Maintenance Data: After installation, representative templates, instructions sheets and installation details shall be provided to the owner when building is accepted. Include one copy of each hardware schedule, keying and wiring diagrams.

PART 2 - PRODUCTS

2.1 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the drawings.
1. ANSI/BHMA designations used elsewhere in this Section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this Section.

a. Butts and Hinges: ANSI/BHMA A156.1.
b. Bored and Preassembled Locks and Latches: ANSI/BHMA A156.2.
c. Door Controls - Closers: ANSI/BHMA A156.4.
d. Auxiliary Locks and Associated Products: ANSI/BHMA A156.5.
e. Template Hinge Dimensions: ANSI/BHMA A156.7.
f. Door Controls - Overhead Holders: ANSI/BHMA A156.8.
g. Mortise Locks and Latches: ANSI/BHMA A156.13.
h. Auxiliary Hardware: ANSI/BHMA A156.16.
i. Self-Closing Hinges and Pivots: ANSI/BHMA A156.17.
j. Materials and Finishes: ANSI/BHMA A156.18.

2.2 MATERIALS AND FABRICATION

A. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable

ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods, except as otherwise specified.

B. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

C. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.

2.3 LOCK CYLINDERS AND KEYING

A. General: Supplier will meet with Owner to finalize keying requirements and to obtain final instructions in writing.

B. Comply with Owner's instructions for Master Key System and, except as otherwise indicated, provide individual change key for each lock that is not designated to be keyed alike with a group of related locks.

1. Permanently inscribe each key with number of lock that identifies cylinder manufacturer's key symbol, and notation, "DO NOT DUPLICATE."

C. Key Material: Provide keys of nickel silver only.

D. Key Quantity: Furnish 3 change keys for each lock.

1. Deliver permanent keys to Owner’s representatives.
2. Factory construction key project.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hardware installer is to provide the installation of all items identified in the Hardware Schedule except where indicated to be installed by other subcontractors.

B. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.

C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

D. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set thresholds for exterior doors in full bed of butyl-rubber sealant.

G. Weather-stripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.2 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made at no expense to the Owner.

B. Clean adjacent surfaces soiled by hardware installation.

C. Instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

3.3 HARDWARE SCHEDULE

A. General: Provide hardware for each door to comply with requirements of this specification and the Hardware Set Numbers indicated in the drawings of the construction documents.

1. Hardware sets indicate quantity, item, product designation, size, finish and color, and manufacturer as applicable.

    a. Finish is to be Satin Chrome US26D/626-652

2. Hardware supplier to review schedule prior to bidding and if obvious hardware is missing from schedule for door to meet current code requirements for door to function, supplier is to bring it to the Architect’s attention immediately. Failure to do so during bidding does not alleviate the supplier from this task and should a situation arise post bid that requires additional hardware which was obvious or which is required by code, it shall be supplied by the Contractor at no additional cost to the Owner.

B. Manufacturers:

Manufacturer		Designation
1.	Hager	HA
2.	Design	DES
3.	Dorma	DOR
4.	Pemko	PK
5.	BEA	BEA

C. Hardware Schedule:

HARDWARE SET – FIRE DOOR

3	EA	HINGES	BB5 – 4 ½" x 4 ½" x US26D	DES
1	EA	LOCKSET – STOREROOM	3880 x 26D	HA
1	EA	CLOSER	TS-93	DOR
1	SET	SMOKE SEALS	S88D	PK

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior gypsum board assemblies.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: hot-dip galvanized, unless otherwise indicated.

B. Studs and Runners: ASTM C 645.

1. Steel Studs and Runners:

a. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm).
b. Depth: As indicated on Drawings.
c. Provide deeper runner track as needed in location which are to receive SFRM in order to facilitate installation of studs.

C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm)

2.2 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

3.3 INSTALLING FRAMED ASSEMBLIES

A. Install studs so flanges within framing system point in same direction.

1. Space studs as follows:

a. Multi-Layer Application: 16 inches o.c. unless otherwise indicated.

B. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

a. Install two studs at each jamb unless otherwise indicated.

b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

C. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Interior moisture resistant, type X gypsum board.

1.3 QUALITY ASSURANCE

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements, provide one of the following:

1. American Gypsum.
2. Georgia-Pacific Gypsum LLC.
3. Lafarge North America Inc.
4. National Gypsum Company.
5. PABCO Gypsum.
6. Temple-Inland.
7. USG Corporation.

B. Gypsum Board: 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.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
4. Long Edges: Tapered.

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
2. Shapes:

    a. Cornerbead.
    b. Bullnose bead.
    c. LC-Bead: J-shaped; exposed long flange receives joint compound.
    d. L-Bead: L-shaped; exposed long flange receives joint compound.
    e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    f. Expansion (control) joint.
    g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.

2.6 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Type X: As indicated on Drawings.

B. Multilayer Application:
1. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
2. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated on Drawings and according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.
3. U-Bead: Use at exposed panel edges and where indicated.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 4: at all locations

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
   1. Gypsum board.

1.3 SUBMITTALS

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

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

   1. Submit Samples on rigid backing, 8 inches (200 mm) square.
   2. Step coats on Samples to show each coat required for system.

1.4 QUALITY ASSURANCE

A. MPI Standards:

   1. 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.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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:

1. Benjamin Moore & Co.
2. Duron, Inc.
3. ICI Paints.
4. Miller Paint.
5. Porter Paints.
6. PPG Architectural Finishes, Inc.
7. Rose Tablert
8. Sherwin-Williams Company (The).

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. Flat Topcoat Paints: VOC content of not more than 50 g/L.
5. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
6. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
7. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.Verify that three subparagraphs below are acceptable for LEED-CI before retaining.
8. 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).
2. 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.
    j. 1,2-dichlorobenzene.
    k. Diethyl phthalate.
    l. 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 chosen by Architect.

2.3 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

1. VOC Content: E Range of E3
2. Environmental Performance Rating: EPR 3.

2.4 LATEX PAINTS

A. Interior Latex (Eggshell): MPI #52 (Gloss Level 3).

1. VOC Content: E Range of E3
2. Environmental Performance Rating: EPR 3.

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. 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.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

C. 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.

D. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Gypsum Board Substrates:

1. Latex System: MPI INT 9.2A.

a. Prime Coat: Interior latex primer/sealer.
b. Intermediate Coat: Interior latex matching topcoat.
c. Topcoat: Interior latex (eggshell).

END OF SECTION 099123

SECTION 140000

GEARED TRACTION ELEVATOR ALTERATION

PART I GENERAL

1.1 GENERAL PROVISIONS

1.1.1 Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

1.2.1. Provide both the labor and materials to perform the Alteration on two (2) geared traction elevators as specified herein.

1.3 WORK INCLUDED:

1.3.1 Provide labor, materials and equipment necessary to complete the work identified in this Section, including but not limited to the following:

1.3.1.1 Provide labor, materials, products, equipment and services necessary to complete the as specified alteration of the two (2) existing Westinghouse geared traction elevators specified herein. The "Scope of Work" shall include but shall not be limited to the following: Retaining the existing Thyssen Krupp GD 1geared traction machines and replace their current 20 hp flange mounted DC drive motors with new flange mounted 15 KW (20 hp) Imperial AC Drive motors, replace the existing 480 VAC 3 phase Type EPL Westinghouse Controllers with new 480 VAC 3 phase non proprietary MCE Model 4000 Controllers with the ELGO landing systems with new digital speed and velocity encoders (The velocity encoder shall be mounted on drive motor shaft and the position encoder shall be mounted on the car top to read the stationary hoistway selector tape), provide new hoist rope tension load weighing sensors, new machine room monitor, new landing door headers, new landing door vertical header support struts, new landing door hanger tracks, new car and landing door panels with front and rear sides and matching sight guards material, new MOVFR door operator, new car and landing door sheaves, new door operator arms, new car door clutch, new up-thrust rollers, new car and hoistway door gibs, all new landing door hardware including door clutch rollers, new gate switches, new GAL interlocks, new Smart Track Spirators, new interlocks, new traveling cables, new car station(s), new emergency cab lighting that lights two (2) of the existing overhead fluorescent tubes, new roller guides, new counterweight ring and string and new seismic switch.

1.3.1.2 The publications listed below form part of this specification to the extent referenced. The publications

are referenced in the text by designation only.

1.3.1.3 Safety Standards for Elevators and Escalators ASME A17.1-2010, ASME A17.3-2011, NFPA 70 NEC 2014, ICC/ANSI A117.1-2010, South Carolina Elevator Code.

1.3.1.4 Elevator and Escalator Electrical Equipment ASME-A17.5-2011 /CSA B44 - 11

1.3.1.5 Where codes, standard details and other standards are referenced, latest adopted editions and amendments shall apply as specified. These geared traction elevators shall meet Local, National, Federal and State applicable Codes for this project. Where a conflict in codes is evident the more stringent code shall apply unless it is contrary to the Authority Having Jurisdiction.

1.4 WELDING

1.4.1 Welder Qualifications: The quality of welding and welding procedures shall be determined by testing the welder's ability to make sound welds, under standard working conditions with the equipment to be used in the work for this project and in conformance with W59-03 (R2008). Submit certified copies of the qualifications for each welder that will be employed on this contract. If mechanic certification is not received then any welding performed shall be ground off and a certified welder shall be retained at the elevator contractor's expense to re-weld the areas welded. Each welder shall identify his work with a code marking. Furnish a listing of the names of the welders with their corresponding code marks.

1.4.2 Welding and Burning: The Contract work shall be performed by experienced field mechanics in a workmanlike manner. The use of field welding in any portion of the elevator installation shall not be allowed without prior approval from the Architect/Owner. Employment of bolts, lock washers, flat washers, hillside washers and nuts in the work shall be the only approved method of structural fastening. The random torching and welding of structural members by field mechanics shall not be allowed.

1.5 DEBRIS

1.5.1 Removal of Debris: All equipment removed as part of this alteration belongs along with packing cartons and creates belongs to the installer and shall be removed from the job site expeditiously at the Elevator Contractors expense without delay.

1.6 SUBMITTALS

1.6.1 Submit manufacturer's brochures, layout drawings, samples and submit a completion schedule for approval prior to the fabrication or delivery of materials and equipment. In no case shall these documents be submitted more than thirty days after Contract Award unless otherwise noted. Allow twenty-one (21) calendar days for review and approval by the Architect/Owner. If re-submittals are required they shall be returned to the Architect within 14 days. These submittals shall contain enough detailed information to confirm that the equipment and completion dates shall conform to the

requirements of this specification and Architect and General Contractor's elevator installation time line completion dates. These submittals shall not contain less than the following information:

a. Layout drawings shall depict the location and arrangement of machinery and control equipment in the hoistways, machine room and pits.

b. Drawings and catalog cut sheets for all new equipment specified including controllers, car tracking system, AC drive motor, landing door panels with matching sight guard finish, landing door hardware complete, 3 D door protective system, landing and car fixtures, return panels, car and counterweight roller guides, car and hall push button fixtures including cover plates.

c. Complete information on machines, solid state drive control, brakes, signal system and controllers. Provide total weight of equipment components supplied.

d. Include details of drive motors and controller fastening and restraints. Provide calculations certified by a licensed structural P.E. engineer registered in the South Carolina.

e. Engineering Abstracts: Provide a detailed listing of equipment that is to be supplied to this project. A formal copy of the engineering and sales abstract sheets shall be submitted for approval.

f. In seismic risk zone 2 or greater, include details of equipment foundations, restraints and details for earthquake protection. Provide calculations certified by a licensed structural engineer. Submit calculations within 60 days after award of the contract.

g. BTU Output: Provide total equipment BTU output for the controller, AC VVVF drives (Only provide regenerative drives), drive motor, transformers if required, isolation transformers, and the geared machines under full load conditions of 240 starts/hr (full load up RMS).

h. Completion Schedule: Supply a CPM schedule for each elevator, containing all of the informational details necessary to permit complete monitoring of the work progress, including such activities as engineering, equipment approvals, manufacturing, equipment delivery, as well as individual installation events and completion dates for each elevator and related building interfacing activities. This schedule shall also contain dates when "Work identified in other Sections" is required to be complete in order to realize the anticipated completion dates. Arrange the schedule to show the anticipated construction progress, including estimated time allowances for each work activity required to facilitate the elevator installation. Provide, for each activity in the schedule, elapsed time (days), expended time (team hours or mechanic hours), actual number of constructors used to perform each work activity and accumulated event days (total number and associated calendar date). The contractor must deliver all materials within 16 weeks following approval of submittals.

Completion Schedule Time Line		
Sequence of Events	**Time Frame After Submittal Approval**	**Date**
Specifications released for review and approval.		
Specifications approved and released for bidding.		
Contractor bid due date.		
Contract award date.		
Submittals received, reviewed and approved.		
Controller delivery date after final submittal approval.	3 - 4 weeks	
Drive motor and coupling delivery date after final submittal approval.	5 - 6 weeks	
Traveling cable and misc. wiring delivery date after final submittal approval.	3 - 4 weeks	
New push button landing fixtures delivery date after final submittal approval.	3 - 4 weeks	
New Landing door and car entrance cladding delivery date after final submittal approval.	5 - 6 weeks	
Commence the Alteration on the first car.	Start	
Finish the Alteration on the first car and final inspection.	5-1/2 weeks	
Commence the Alteration on the second car	Start	
Finish the Alteration on the second car and final inspection.	5-1/2 weeks	
Final re-inspection (close of project)	**17 weeks total**	

i. Time for Completion: All work to be perform under this contract shall be completed within 139 calendar days after final approval of all submittals.

j. Alteration Sequence: This Alteration shall be performed sequentially one elevator at a time during normal working hours 7:00 AM - 6:00 PM M - F. No overtime shall be authorized for this project unless approved by the Architect or Project Manager. One elevator shall remain in normal automatic operation at all times during the execution of this Alteration.

j. Liquated Damages: Subject to the provisions of this contract in the event of failure on the part of the Contractor to complete the work within 139 days after final approval of all submittals including any time extensions that may be granted by the Architect or the Project Manager the elevator contractor shall be liable to USC for liquidated damages in the amount of $2,000 for each calendar day of delay.

I. Progress Payment Verification Documents: Supply actual detailed labor estimates for each elevator. These detailed labor estimates shall identify both the number of mechanic hours associated with each work activity and the percentage of total installation man hours associated with each work activity. These individual labor estimate updates shall be submitted in conjunction with detailed material listings for each elevator each month with a summary dollar amount.

j. Illuminated hall call push buttons and cover plate assembly, completely fabricated to demonstrate design, finish and method of mounting.

k. Car position and director indicator and main floor landing direction indicators.

l. One of each type of main car panel elements, including push buttons, exposed switches and related raised numbers and symbols including Braille plates.

1.6.2 Operation, Maintenance and Adjustment Manuals:

a. Furnish three (3) complete sets of bound operating, maintenance and adjustment manuals specific for this installation. The operating portion shall be bound separately from maintenance and adjustment portion. Explain in detail any components or methods peculiar to a particular system. Furnish one (1) complete manual prior to the time that the equipment tests are performed. Furnish the remaining manuals before the Contract is completed. The following identification shall be inscribed on the cover:

OPERATION, MAINTENANCE AND ADJUSTMENT MANUALS
BUILDING NAME. . . . . .
EQUIPMENT TYPE. . . . . .
CONTRACT NO. . . . . .
DATE . . . . . .
CONTRACTOR . . . . . .

b. Provide a table of contents. Insert tab sheets to identify discrete subjects. Instruction sheets shall be legible and easily understood, with large sheets of drawings folded in. The manual shall be complete in all respects for all equipment, controls, accessories and appurtenances stipulated. Manuals must be applicable to the specific equipment installed and shall include as a minimum the following:

(1) System layout showing machinery and controls.

(2) Wiring and control diagrams with data to explain detailed operation and control of each component.
(3) A control sequence describing car or hall call assignment, car starting, contract speed, slow down, leveling and stopping.
(4) Installation instructions.
(5) Safety precautions.
(6) Adjustment procedure and troubleshooting diagrams, link maps (if applicable) and Illustrations.
(7) Test procedures.
(8) Performance data.
(9) Parts list with manufacturer's names and catalog numbers.
(10) Maintenance schedules.
(11) Service organization with name, address and telephone numbers.
(12) Lubricant charts. The chart shall identify lubricants as well as lubrication points and required frequency of application.
(13) Provide any supplemental instruction for adjustment and care of the new equipment that may become necessary because of changes, modifications and/or replacement of the equipment or operation under requirements entitled "Guarantees" in the "Construction Contract Clauses".

1.6.3 Wiring Diagrams and Related Drawings:

a. Wiring Diagrams and Sequence of Operation: Prior to substantial completion of the Contract the Contractor shall submit six (6) copies each of complete "As built" wiring diagrams, schematic diagrams and complete connection diagrams for each elevator showing car wiring, fixture and controller wiring. These diagrams shall show all electrical connections, functions and sequence of operations of all apparatus associated with the installation in the machine, control room, hoistway and remote panels. All symbols shall be listed and named, and all revisions and field changes shall be incorporated therein. Included in the above submission shall be a complete set of "As Built" electrical straight-line diagrams showing electrical and electronic characteristics of all circuits, components and field devices, including printed circuit boards; block diagrams shall not be accepted. Also provide a complete set of Link Maps if applicable.

b. Contractor shall provide: As a part of the diagrams required to be submitted, schematic diagrams of solid state speed and signal controls which will clearly and adequately present enough informational detail sufficient to allow maintenance personnel to diagnose and identify non-functioning printed circuit boards and other components. Diagrams shall contain all the solid-state logic information necessary for the determination of proper input and output requirements for normal operation within a solid-state circuit board or device.

c. Required Diagrams: Four (4) of the six (6) required sets of wiring diagrams shall be reproduced at a reduced scale, each set bound in a durable cover, and the four (4) bound sets, along with one (1) set of standard size diagrams, shall be delivered to the Owner. The sixth (6th) set of standard size diagrams shall be enclosed in 10 mil minimum laminated plastic covers front and back and the entire set bound in a rack and mounted in the elevator machine

room at an approved location.

d. Provide at least two copies of all wiring diagrams (AS BUILT), parts manuals, maintenance manuals and adjustment manuals in electronic PDF format.

1.6.4 Lubrication Chart: Furnish a lubrication chart for each elevator. Mount these charts as directed in the elevator machine rooms. These charts shall identify lubricants as well as lubrication points and the required frequency of application or replacement. The Contractor shall identify each type of bearing provided, whether sealed or non-sealed and the frequency of lubrication. Sealed bearings shall not be provided with grease fittings and non sealed bearings shall be provided with grease fittings.

1.6.5 Diagnostic Tool: The Contractor shall provide the Owner as part of the base elevator contract the full spectrum diagnostic and adjustment tool and related adjustors' manual that is required to trouble shoot and adjust both the signal and speed control equipment and also annual and five year safety testing procedures. This tool maybe site sensitive so that it cannot be used on other similar equipment in other properties. This full spectrum diagnostic, adjustment tool and manual shall become the property of the Owner upon contract award. This full spectrum adjustment and diagnostic tool shall be turned over to the Owner as prerequisite for contract award prior to commencement of field installation activities.

1.6.6 Written Certifications: Required as follows:

1. Contractor shall clearly certify the following:

   a. Elevators are manufactured and installed in compliance with requirements of this Section and the Contract Documents.
   b. Elevators and associated equipment noise levels shall not exceed NC40 in Lease Spaces.
   c. Acoustical environment within Lease Spaces shall be free of any pure tone noise due to operation of elevator equipment for this Project. For the purpose of this specification, a pure tone shall be defined as a sound level in any one-third octave band which is greater than 5db above both adjacent one-third octave bands, in the range of 45 to 11,200 Hertz.

1.6.7 Hazardous Materials Notification:

a. In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Architect/Owner, a "Material Safety Data Sheet" (MSDS) shall be substituted for that proposed product or material prior to installation.

1.6.8 Asbestos and PCB Certification:

a. After completion of installation and prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated bihenyls (PCB), using format identified in Section 01700 / Project Closeout.

1.7 **WORK IDENTIFIED IN OTHER SECTIONS**

1.7.1 Legal hoistway and pit enclosure.

a. Bevel cants (75 degrees from horizontal) over any non opening side wall ledges that project 4" or more into the hoistway.

b. Provide and install elevated work platforms in elevator pits 1 and 2 to service both the car and counterweight buffers and also to service car bottom components like car safeties, grip switch and car bottom roller guides (USC In House).

c. Ladders: Extend the current pit ladder side rails to 48" AFF if required (USC In House).

d. Lighting: Provide 10 fc at the new elevated decking levels in the pit. (USC In House)

1.7.2 Legal machine room:

a. Provide a 2 hour fire rated machine room enclosure as specified by the Architect to replace the current open grille wire cloth enclosure. Also provided a new 1-1/2 hour fire rated self closing and self locking elevator machine room access door that swings out. Provide removable drive motor access panels within the new machine room walls to facilitate drive motor working clearances.

b. Provide machine room heating, ventilation and air conditioning as required to maintain the machine room temperature between 60 and 80 degrees Fahrenheit. Assume a maximum 18,000 btu per car or 36,000 btu total.

c. Provide a Class "ABC" fire extinguisher with mounting bracket in machine room adjacent to the machine room access door.

1.7.3 Electrical services:

a. Verify or provide machine room lighting and switches to realize (19 fc) at the floor and a uniform 10 fc at the elevator pit floors and suspended platforms. Provide fluorescent lighting mounted horizontally with T-8 fixtures in the pits with duplex tubes is recommended for 10 fc code compliance.

b. Verify that there are GFI convenience duplex outlets located in both the machine room and also in the elevator pits. NFPA 70.

c. Provide new or reuse the existing three phase main line power feeders to the terminals of each new elevator controller, including protected fused, verify that the disconnect is lockable only in the "OFF" position (copper conductors to terminals required).

d. Verify that the automatic emergency power transfer switch provides power to both elevators and has power available to run one (1) elevator at a time with a full capacity load at contract speed. Also verify that the emergency power generator is capable of absorbing the regenerative energy which would be pumped back into the generator under an overhauling condition without damaging the emergency generator.

e. Provide separate emergency power signal to each elevator or group of elevators. This signal shall notify the elevator signal system that emergency power is being provided. This signal shall be a normally open dry contact on the ATS which shall close under emergency power conditions.

f. Provide a normally open dry contact to the elevator bank which shall close over an adjustable time period of from 5 to 29 seconds in advance of normal power restoration or during emergency power testing transfer. This contact closure shall notify the elevator signal system that normal power or emergency power transfer testing will take place in a defined time period, which shall allow the emergency power or normal power car(s) time to stop at their nearest floor to await normal or emergency power transfer.

g. Provide in-phase monitor to verify that the standby or emergency power is in-phase with normal power when a transfer back to normal power takes place. This in-phase monitor shall also provide in-phase monitoring during both normal / emergency and emergency / normal power during testing.

h. Currently there is only one (1) 120 VAC 15 amp disconnect for each car. Provide a second 120 VAC 15 amp disconnect for each elevator. One circuit shall provide car lighting and exhaust blower and one circuit for plug receptacles, work lights and other devices. The car lighting and exhaust blower circuit shall be automatically powered under emergency power conditions.

i. Provide a 120 Volt three phase 30 amp AC power source for elevator signals (if required). This feeder shall be automatically powered under emergency power conditions. Run wires and conduit to a location as indicated by the elevator contractor.

j. Verify that there are functional fire alarm initiating devices in each elevator lobby only to initiate Emergency Recall Operation to the primary fire or alternate fire floor if the building is not fully sprinkled. The Ground floor shall be the primary fire floor. The alternate floor shall be the first floor. There shall be two (2) active initiating device zones for the elevator group. (Designated Level Zone) = Machine Room + all elevator lobbies (except the designated level). (Alternate Level Zone) = Main Designated Lobby. Verify fire main and alternate fire floors with the local Fire Marshall. Be advised that only alarm initiating devices in the elevator lobbies, hoistway and machine room shall automatically capture the elevators into Phase I firefighters' mode of operation. No other fire alarm initiating device in the building or manually operated pull stations in the building shall capture the elevators into phase I operation. Run alarm initiating device wires and other signal wires in conduit to group or individual car controllers. These signals to the controller shall be 1) Zone 1 2) Zone 2 and 3) Smoke alarm signal (Hat) for the machine room only.

k. Permanent power of permanent characteristics as required by elevator Contractor shall be provided to install, test and adjust the elevator equipment.

l. Electric power during erection, for illumination, operation of tools, and shafters.

m. TV cameras mounted if required in the cars and related coaxial cable interconnection and related conduit run from each elevator traveling cable termination point to the security location as required. Security contractor shall confirm the coaxial cable parameters with the elevator contractor during the submittal review process. The Elevator contractor shall include the coaxial cable within their traveling cables as specified.

o. Provide both main and auxiliary replacement car stations in the car return panels. Provide provisions to install a card reader in each car return panel inclusive of wiring and conduit from each car junction box and machine room controller to another location. The card reader shall be located behind a flush mounted smoked lexan lens insert measuring approximately 6" X 6" within the designated car operating panels in each elevator. The elevator contractor shall provide a free depth space of 3" and a horizontal mounting bracket behind the designated swing return panel to accommodate the card reader assembly mounting. The elevator contractor shall provide all connecting wiring from the car to the hoistway junction box or controller to interface with the card reader installer.

p. Provide a telephone line to each elevator controller or re-use existing.

1.8 SITE CONDITION INSPECTION

1.8.1 Pior to beginning the installation of equipment, examine the hoistway and machine room architectural and structural drawings to verify that no dimensional or other irregularities exist that would affect the execution of the work as specified. Particularly, note:

a. Hoistway dimensions including pit depth, overhead clearances, hoistway plumbness and length of travel.

b. Sill supports and pockets.

1.8.2 Do not proceed with installation until "work identified in other sections" conforms to project requirements.

1.9 ERRORS AND OMISSIONS

1.9.1 In order to discover and resolve any conflicts or lack of definition which might create construction problems, the elevator bidder shall submit a written report to the Architect/Owner at least ten (10) days

prior to the bid due date for the work covered by this section. This report shall include the following statement:

1.9.2 "We have examined the drawings and specifications for the work required in the elevator contract and for the related work identified in other sections". Except for the items described in the attached listing we have discovered no errors, omissions, impractical details or conflicts between our proposed work and that of other trades or conditions which would require deviations from the drawings and specification."

a. Certify the adequacy of the proposed electrical power supplies indicated on the electrical drawings. Submit a "Power confirmation" standard form to the Owner for verification of the power characteristics required for the new equipment.

b. List items for which clarification is necessary. If none, so state.

c. Compliance with this requirement does not make the bidders responsible for such errors, omissions or discrepancies, but simply gives the elevator contractor the opportunity to have such items corrected prior to the receipt of bids.

1.10 WORKMANSHIP, MATERIALS AND PROTECTION

1.10.1 All work under this section shall be installed in a first class, neat and workmanlike manner by mechanics experienced in the trade involved. All materials and equipment shall be new, without imperfections, flaws or defects.

1.10.2 The Contractor shall properly protect all work to prevent damage. All conduit openings shall be closed with caps or plugs during the installation. All equipment shall be tightly covered with approved plastic material and protected against dirt, water or mechanical damage. At final completion, all work shall be thoroughly cleaned and delivered in perfect, unblemished condition.

1.10.3 All damage to the building or its mechanical and electrical system resulting from the Contractor's failure to adequately protect the work shall be repaired, or replaced as directed, at no additional cost to the Owner.

1.11 INTERCHANGEABILITY

1.11.1 The equipment, apparatus, devices and appurtenances of the elevators shall have all parts which perform the same function manufactured to one design for each part, and each part shall be interchangeable with other like parts.

1.12 TRADEMARKS

1.12.1 No trademarks, nameplates or other identifying symbols visible to the public shall appear on any piece of equipment.

1.13 **GENERAL REQUIREMENTS**

1.13.1 ASME A17.1 2010 unless otherwise indicated or specified. The completed elevator installation, including equipment, material, workmanship, design and tests, shall be in accordance with the standards, rules and regulations referenced herein. Parts and equipment subject to wear shall be designed and constructed for complete inter-changeability among like units provided by this Contract. Working parts shall be accessible for inspection, servicing and repair. Provide adequate means for the lubrication of wearing parts that require lubrication. Maintain all elevator equipment in an orderly and clean manner during and after construction prior to acceptance.

1.13.2 Elevator Description: This specification includes the alteration of two (2) geared traction elevators. These elevators shall be converted from a DC drive with a motor generator set to a VVVF drive with flux vector control. Elevator car and hoistway doors shall be automatically powered by an on board door operator. The approved elevator systems are the Otis Elevonic 411, Schindler Model TXR5 7000, KONE Model KCM and MCE 4000 or an approved equal.

1.13.3 Geared Traction Elevator Description:

A. Passenger Traction Geared Elevators: 1 - 2

1. Type: Conventional Geared Traction
2. Number of cars: 2
3. Capacity: 2,500 lbs
4. Speed: 350 fpm
5. Counterbalance: Precisely 40.0%
6. Starts Per Hour Capability: 240
7. Drive Capability: 250% FLRC
8. Minimum HP: 27 hp 20 kw
9. Type loading: Class A
10. Length of Travel: 70' Car 1 (Verify)

    Note: Verify travel distance on site
11. Number of Stops: G,1,2,3 and 4

12. Number of Openings: 5 Front Only

13. Car Inside:

    Width: NA
    Depth: NA
    Height: NA

14. Platform Outside:

    Width: NA
    Depth: NA

15. Overhead Dimension Available: (Verify)

16. Pit Depth Available: Elevated Work Platform Required (By Others)

17. Cab shell: Retain the existing 14 gauge steel shell walls and 12 gauge steel canopy, car sill, side wall hang on panels, flooring, suspended ceiling panels and ceiling lights. Wrap both front returns and entrance header with 16 gauge brushed # 4 stainless steel.

18. Platform: Retain platform and car sling.

19. Verify car balance at precisely 40.0% and correct by adding or subtracting counterweights as required.

20. Cab Height from Floor to Canopy: Retain existing.

21. Door Opening Size: 3' 6" x 8' 6" Front Only

22. Door Opening Type: Single Speed Center Opening 42" x 8' 6"

23. Landing Entrances and Doors: Retain existing entrance frames at all levels and replace all landing doors with new primed or backed enamel of a color as selected by the architect except at the main lobby where matching oxidized commercial bronze 90/10 doors shall be provided to match the existing frames. Submit oxidized samples for approval. Field oxidization for matching if required shall be included.

24. Operation:

    (a) Automatic - 2 car group (1-2) selective collective with zoning / One (1) button riser serving floors G, 1,2,3 and 4
    (b) Selective collective duplex
    (c) Independent operation

(d) Inspection operation
(e) Key Access (Top and bottom floors)
(f) Emergency Recall Operation
(g) Main and Alternate fire floors
(h) Ground floor Security (Card reader)
(I) Restricted Floor Access (Card Reader)
(j) Cars Out of Service
(k) Emergency Power Operation
(l) Main lobby card reader only to allow car interior access.
(m) Provide 3 D Landing Door Protection

25. Roped: Overhead 1:1 Retain existing machines and ropes.

26. Safeties: Totally disassemble, wire brush to remove any corrosion, re-adjust and lubricate. Provide new HW active shaft governor for encoder mounting with 3/8" minimum diameter rope with new tail end sheave. Car speed shall be increased from the current 250 fpm to 350 fpm. Recalibrate current Westinghouse B2 safeties to 350 fpm as required. Re-use existing DB-1 machine.

27. Seismic Zone: 2 or greater 3 (Provide seismic zone requirements per ASME A17.1)(Ring and string on both front sides of counterweight frame on each elevator. Also provide seismic switch for both elevators.

1.13.4 Performance: The elevators shall be adjusted to conform to the following basic performance standards:

a. Speed: Full load "Up" shall not be less than the rated speed. Full load "Down" shall be no more than 103% of rated speed. No load "Up" or "Down" shall be within 3% of the rated speed.

b. Capacity: With 125% capacity load in car, run car down from top terminal floor to any floor including bottom terminal and demonstrate that the car can stop within the leveling zone and open its doors without the need to re-level.

c. Door Operation, Opening and Closing: For both elevators, leveling accuracy shall be less than +/- 1/8" under all loading conditions regardless of direction of travel without hunting. Provide self-leveling or re-leveling device. Self-leveling or re-leveling device shall, within its zone be entirely automatic and independent of the normal operating device and shall correct for over travel, under travel and rope stretch.

d. Car start to stop (run) time is measured from car start movement at one floor until the car is stopped (start of drive sheave rotation to stop of drive sheave rotation) within 1/8" at an adjacent floor. Elevators shall provide consistent performance standards. The elevator shall

maintain approximately level at the landing, irrespective of load while loading and unloading. The performance times shall be maintained without "hunting" at the floor levels. Prior to termination of the contract included maintenance period the elevators shall be re-adjusted, as required, to achieve a brake to brake (car start to car stop) time for one floor runs using a 12' 0" reference as related below.

e. Provide a "brake to brake" or "car start to car stop time" or "start of drive sheave rotation to stop of drive sheave rotation" for a 12' 0" floor that shall not to exceed:

1. 4.8 - 5.0 seconds reference (Geared)

f. Doors shall start to open while the elevator is leveling and shall be three-quarters open when car sill is level with the landing sill with the brake set. Pre-door opening during the leveling process shall be required.

g. Starting and stopping shall be smooth, without perceptible steps of acceleration or deceleration.

h. Stopping upon operation of the in car "KEYED STOP" switch shall be rapid but not violent. Controlled emergency stopping where brake delay is realized shall not be accepted. All power shall be removed from the driving machine motor and brake immediately upon stop switch operation.

i. Door operation shall be quiet and smooth and shall not result in cab movement during the door cycling process. Door cycle times shall be adjusted as follows:

Cars 1 - 2

Opening Width:	42" (Single Speed - Center Opening
Open Time:	1.6 seconds
Close Time:	2.4 seconds

j. Provide a car call dwell timer with an adjustable range of from 1.0 second to 10.0 seconds. Initially set the timer at 3.0 seconds. The control circuitry shall be such that with the breakage of the car door protective field during door opening and full open position and or a pulsation of the door close push button and or with a pulsation on a registered car call push button that the car call dwell time shall be reduced over an adjustable range from 3/4 to 1-1/4 seconds.

k. Provide a hall call dwell timer with an adjustable range of from 2.0 seconds to 10.0 seconds. Initially set the timer at 4.0 seconds. The control circuitry shall be such that with the breakage of the car door protective field during door opening and full open position and or with a pulsation on a the door close push button and or with a pulsation on a registered car call button push button the hall call dwell time shall be reduced over an adjustable range from 3/4 seconds to 3.0 seconds.

l. Provide a car call, hall call coincidence circuit whereby in the event that an elevator is responding to the same car call and directional hall call demand, that the hall call dwell time shall have precedence. In the event of this coincidence condition the breakage of the door protection field or a pulsation on either the door close or car call push button shall not reduce the established hall call dwell time.

m. Provide a 4 second minimum advanced audible and visible hall lantern signal at ground floor in response to a registered hall call prior to the opening of the car and landing doors. Provide signal logic whereby the ground floor directional indicator can be turned off for car calls only with a keyboard entry. Also provide signal logic whereby the advanced hall lantern signal at the main lobby only can be delayed with a keyboard entry until passenger unloading is complete during up peak time periods. Provide all new hall lanterns at all floors.

n. Provide a car start dwell time of 0 to 0.20 seconds maximum for all cars. Car start dwell time is defined as the time period commencing after the car electrical gate switch contact and the landing door electrical interlock contact are closed with the landing doors mechanically locked and the car of movement in response to a hall or car call demand.

o. Provide a car door nudging time of 35 seconds. The car door nudging time shall be measured from the time when the car door protective field is broken after the car doors have fully opened in response to a car call until the car doors commence to close at a reduced speed with the initiation of a nudging buzzer.

p. Door Force: Provide a door closing force that shall not exceed 30 lbf. This force shall be measured on the leading edge of the door with the door at any point between one third and two thirds of its travel.

q. Provide a signal system design that shall not allow car calls to be registered behind the direction of car travel.

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r. Provide a door control system whereby a forced closed or nudging door mode of operation will not result if the door protection field is not broken during repeated car or hall call stops without passenger transfer or protective field breakage.

1.13.5 Provide 12 months of Warranty / Maintenance for both Elevators: Commence the contract included maintenance period following the completion of the installation including the correction of 100% of all documented deficiencies on each car. The maintenance / warranty time period between when the cars are turned over to USC for beneficial use and time when 100% of the documented deficiencies have been corrected on both cars shall be at the elevator contractors cost. The one (1) year contract included maintenance and warranty shall only commence after 100% of all deficiencies on both cars have been corrected. During this 12 month maintenance period the performance parameters as referenced above shall be maintained. Work Activities shall be performed during normal working hours (7:00 AM to 6:00 PM) M-F excluding holidays, however, twenty-four hour emergency callback service shall be provided as necessary whereby the premium portion of any overtime "call backs" required shall be paid by the owner. The maintenance service shall include a minimum of 6 mechanic hours of preventative maintenance only per month for both elevators excluding “Call Backs”, “Service Work” and “Vandalism”. Maintenance

shall only be performed by competent and trained maintenance mechanics certified by either NEIEP or CET. This maintenance shall include the necessary speed and signal control adjustments, lubrication, cleaning and parts replacement as necessary to maintain equipment calibration and performance in an as new condition over the term of the maintenance and warranty period.

1.13.6 The one year maintenance period shall commence immediately following the completion of the new construction installation and the completion of all the documented deficiencies. Individual cars may be pro-rated to realize a single total start date for the commencement of the one year contract included maintenance / warranty period. This maintenance period shall include the following requirements:

a. Preventive maintenance procedures shall be performed in accordance with Contractor's check chart, supplemental maintenance requirements as identified in ASME A17.1 2010. The minimum monthly preventive maintenance hours per shall be three (3) hours per elevator excluding callbacks, repairs, service work and other services.

b. The Contractor maintenance personnel shall sign in and out on the Owners Elevator Maintenance Activity Log Sheet for each on site visit. The maintenance mechanic shall briefly describe the work activity performed, identify the personnel involved and the time expended.

c. A log pertaining to all maintenance activities as specified in ASME A17.1 2010 shall be maintained on site in the machine room by the maintenance contractor. The log shall contain, as a minimum but not limited to a detailed record of all tests, inspections, and other maintenance duties referred to in this section that have been performed. For records keep in an electronic format, a hard copy shall be placed in the job site log within a maximum of three (3) months of the initial recording.

d. Testing of Elevator systems shall be performed at frequencies as outlined in ASME A17.1 2010 and other testing as required by the Authority Having Jurisdiction (AHJ). The document frequencies in these code standards shall be the minimum frequency for testing.

e. Normal working hours shall be 7:00 a.m. to 6:00 p.m. Monday through Friday excluding holidays.

f. Special Operations: Emergency Power and Firefighters' Operation shall be checked at a frequency as identified in accordance with ASME A17.1 2010 and other local code requirements. A written certification of successful operation shall be delivered to the Owner after each test performed, in addition a record of all such tests shall be posted in the machine room log books for each elevator. Firefighters' service shall be tested once per month by the elevator maintenance contractor and the results entered into the machine room Firefighters' Service log. On line entry of the results of the testing maybe performed, however, a hard copy of the results must also be entered into a machine room Firefighters' Service Log.

g. An emergency callback is defined as the need to correct a "shutdown" or "malfunction" by adjustments or minor parts replacement.

h. The bidder shall provide the below listed billing rates with the bid document submission. These billing rates are subject to annual material and labor adjustments as outlined elsewhere in this Agreement:

Rate	Monday - Friday 7:00 AM to 6:00 PM	Time X 1.7 Monday thru Saturday (Premium Time Only)	Time X 2 Sunday and Holiday (Premium Time Only)
Adjustor			
Mechanic			
Helper			
Team			

i. Spare Parts: Provide spare parts required for maintaining these elevators. These spare parts shall be placed in gray steel maintenance cabinet Grainger Model 1W814 which shall be provided by the elevator contractor in the machine room, with doors equipped with a lock and two keys. Also provide OSHA waste can Grainger 4T080. These spare parts and the cabinet shall become the property of the Owner and shall be left on site if maintenance contract is terminated. Immediate spare part replacement shall take place when stocked on site spare parts are used. Place the maintenance cabinet in the machine room at a location as approved by the Owner. The minimum spare parts are as follows:

1. A complete set or box of fuses for all types used.

2. One contactor assembly for each type used.

3. Spare relay or switch for each type used.

4. One door operator motor for each type used.

5. Hanger sheaves for car and hoistway doors, one of each type.

6. Two complete door interlocks and car gate switches.

7. A complete door protection unit assembly for each type used.

8. A complete set of spare solid-state printed circuit boards for each type used.

j Prior to the completion of the contract included 12 month maintenance period all code required Category testing shall be performed and log entries made in the machine room log books.

1.13.7 The bidder shall provide the below listed maintenance billing rates with the alteration bid document submission. The alteration billing rates are for work activities not identified in the "scope of work". These billing rates are subject to annual material and labor adjustments as outlined elsewhere in this Agreement:

Rate	Monday - Friday 7:00 AM to 6:00 PM	Time X 1.7 Monday thru Saturday	Time X 2 Sunday and Holiday
Adjustor			
Mechanic			
Helper			
Team			

1.14 **POWER SUPPLY**

1.14.1 The electric service available at the elevator controller will be 480 VAC, 3 phase, 60 cycle. Before manufacture of the equipment, the exact power requirements for each elevator shall be calculated and submitted to the Architect for approval. This power confirmation shall include but shall not be limited to the following: 1) Full Load Up Running Current (FLRC) with constant contract velocity in the up direction 2) Full Load Up Acceleration Current (FLAC) - Provide drives rated at 250% capability of the FLRC 3) The maximum amount of regenerative power (Full load down) realized with each unit during emergency power conditions 4) Maximum BTU heat output of each elevator based upon 240 starts per hour. This power confirmation data sheet shall also state whether or not an in phase monitor is required during the time periods of power transfer. The Contractor shall also submit a standard "Power Confirmation" request to the Owner and shall not proceed with fabrication of equipment until the Contractor receives a return confirmation.

1.15 **POWER CHARACTERISTICS AND HEAT RELEASE REQUIREMENTS**

1.15.1 Design equipment to regenerate overhauling power back into building power supply both during normal and emergency power conditions. Do not provide regenerative power heat dissipation grid resistors in the machine room (which require additional machine room cooling). Provide regenerative drives for all elevators.

1.16 **ARRANGEMENT OF EQUIPMENT**

1.16.1 Code conforming working space dimensions with regard to electrical equipment shall comply with NFPA 70 the National Electric Code (NEC) 2014, unless otherwise approved by the local inspecting authority.

1.16.2 Provisions shall be made in the new perimeter machine room walls to provide code required access clearance (Removable panels - verify if required) at the end of the new drive motors.

PART 2 PRODUCTS

2.1 **CHARACTERISTICS OF EQUIPMENT AND OPERATION**

2.1.1 The elevator components used, including the new controllers and drive motors shall be the product of one manufacturer of established reputation, except that components may be the product either wholly or in part, of another manufacturer of established reputation provided that such items are properly engineered and produced so that the final product will meet the engineering design parameters of this modernization specifications. The elevator manufacturer shall have both installed and maintained elevator equipment for a period of not less than 6 continuous years in Columbia, SC and have had an established office within 20 miles from the site and have had made not less than two (2) modernizations of systems similar in type to those specified here within, which have been in successful operation for a period of not less than two (2) years under conditions of class room building usage. The use of a USC building address or a local post office box shall not satisfy the requirement of an established local office. The machinery and equipment shall operate with a minimum of noise. The Contractor shall provide the name of the buildings where the same elevator equipment has been successfully installed and manufactured by the same manufacturer of the elevator equipment whose product he proposes to provide. The Contractor shall arrange an inspection of similar equipment for the approval of the Architect/Owner if requested. The elevator installation submitted for inspection shall be equivalent to those specified herein. The Owner reserves the right to reject equipment and which are in his opinion is not sufficiently quiet under all operating conditions or that does not to meet the technical requirements of the specifications. The systems which are pre-approved subject to engineering requirements of this project are as follows: Otis Elevonic 411, Schindler Miconic TXR5 7000, KONE KCM 831, Thyssen TAC 50 and MCE 4000 with ELMO selector tape.

2.1.2 The Contractor shall submit to the Owner for approval, samples in quintuplicate of all finishes specified for the stainless steel wrapping which shall include but shall not limited to both car return panels and the header and also landing push button fixtures and other items as appropriate or specified elsewhere.

2.1.3 Prior to work execution, the contractor shall furnish information sufficient to verify full compliance with contract requirements on the proposed items. Such information shall include, as required: Manufacturer's Name, Trade Names, Model or Catalog Number, Nameplate Data, and corresponding project specification number and paragraph.

2.1.4 Provide 6" to 8" square sample material of car interior stainless steel with # 4 brushed finish.

2.1.5 Owner reserves the right to review a building at random where a potential bidder is currently providing full contract maintenance. If in the opinion of the owner or his agent it is found that this potential bidder is not performing in accordance with the parameters of a full maintenance contract, then this potential bidder will not be considered as a responsive bidder.

2.2 **CAR OPERATION AND CONTROL**

2.2.1 Key Switches and Alarm Buttons: Provide keyed operated stop switch in the in car access panel in each elevator. Provide an alarm push button in all car-operating panels for all cars. Operation of the stop switches shall remove power from the driving machine motor and brake and stop the elevator independently of the regular operating device. The emergency alarm buttons shall be connected to an alarm bell and electrically parallel with the car call push button device to also serve as a redundant emergency car call signal.

a. Alarm Button: Double contact type. One contract shall operate an A.C. bell served by the normal A.C. power supply. The other contact shall operate a different bell powered from the car emergency lighting power supply. Both bells shall be 6" in diameter. A single D.C. alarm bell can be used providing it is D.C. operated and wired in conjunction with an on-car D.C. battery charging circuit from normal / emergency 110 VAC power.

b. Alarm Bell Location: Locate the alarm bell, including conduit and wiring on the car top of each elevator.

c. Provide two (2) terminals on each controller that shall provide an alarm signal in the event an alarm bell push button is pushed or activated. This signal shall represent the closing of a normally open dry contact. An alarm bell activation in the car only without an external controller signal shall not be accepted.

d. Provide all elevator key switches of the EX Series. Dupar push button and switches are unacceptable.

2.2.2 Hoistway Access Switch: Provide key-operated hoistway access switches that shall permit limited movement of the car, both at the lowest terminal floor served and also at the top floor terminal floor served (or as approved by the local inspecting authority) for hoistway key inspection access. These switches shall be operative only when the inspection switch in the car operating panel is in the "INSPECTION" position. For both elevators, these switches shall be located 6' above finished floor. Provide bronze key access cylinder switches with only the ferule exposed in the landing door frames (submit drawing for approval). The bottom key access switch shall limit upward travel so that the car bottom toe guard is level with entrance header. The top floor key access shall limit car travel downward until car crosshead is level with top or upper floor landing sill.

2.2.3 Top of Car Operating Device: Provide the elevators with the manufacturer's standard operating devices, mounted on or from the car crosshead for purposes of adjustment, maintenance and repair. This control shall consist of buttons listed "UP", "DOWN", "SAFETY", "EMERGENCY STOP SWITCH" (red in color) and an "INSPECTION SWITCH". The Inspection Transfer switch on the top of car operating device shall disconnect the hoistway access switches and render the top of car operating device operative. Also provide both door open and door close constant pressure push buttons within the inspection station. Operating buttons and control handles shall be shrouded or otherwise protected to preclude accidental movement. Emergency Operation, alarm buzzer and indicator light marked fire service shall be provided in the top of car inspection box to notify the top of car inspection operator that Emergency Operation Recall has been activated. Provide a car top ground fault duplex receptacles.

2.2.4 Automatic Emergency Recall Operation:

A. General: Provide Emergency Operation for automatic elevators to operate as per ASME A17.1 2010.

B. Emergency "FIRE RECALL" Operation:

1. Provide a Phase I three (3) position first floor (ground) "FIRE RECALL" Emergency Operation Recall key switch marked "RESET", "OFF" and "ON" at the ground floor. Ground level shall be the primary fire service floor. The alternate fire service floor shall be the first floor. The actual floors designated for both primary and alternate fire floors for both elevators shall be confirmed with the local Fire Marshall. The Ground level

shall have the primary fire floor key switch and related indicator light incorporated within the hall call push button cover plate.

Emergency "Manual" Recall Operation: Manual recall shall be initiated from a three position key switch located at the Primary. This switch shall be key operated and marked "RESET", "OFF" and "ON". The Manual Recall firefighters' key shall be keyed per code.

a. Recall Operation Key Switches: The "RESET", "OFF", and "ON" positions shall be permanently identified. Separate red pilot lights shall illuminate when a switch is in the "ON" position.

2. Automatic Emergency Recall Operation: Connect the elevator lobby smoke detection system conforming to the applicable requirements of the latest requirements of ASME A17.1 2010 to the signal system. The activation of a detector at any floor (other than the primary fire floor), in the machine room or hoistway shall cause all elevators to return nonstop to the designated primary fire floor. However, activation of a detector device at the designated primary fire floor shall cause the cars to travel to the Alternate fire floor.

a. The designate primary fire floor shall be:

Ground floor for both cars.

b. The Alternate fire floor shall be:
first floor for both cars.

c. When Manual or Automatic Mode ("ON" position), each car shall return to the Primary Fire Floor or Alternate Fire Floor, and remain out-of-service with doors opened unless placed on In-Car Emergency Operation or returned to Normal Service. The procedure for returning the elevators to the Designated or Alternate Fire Floor shall comply with ASME A17.1 2010.

d. Provide an illuminated visual and audible signal, located on the main car operating panel, to alert passengers that the car is in the Emergency Operation Mode. Conform to the requirements of ASME A17.1 2010.

e. When the Recall Switches are placed in the "Off" position, each elevator shall operate normally despite any signals received for automatic recall operation.

C. Phase II Emergency In-Car Operation:

1. Each elevator shall be arranged for Phase II In-Car Operation.

2. Provide a three-position key operated In-Car Emergency Service Switch with "OFF", "HOLD" and "ON" markings mounted flush, along with a visual signal, on the upper portion of the main car operating panel of each elevator in a panel related by code. The "ON" and "HOLD" operations of the switch shall be activated by the emergency operation key switch, and shall be permanently identified. The In-Car Emergency Service Switch shall operate as outlined in ASME A17.1 2010 under Emergency Recall

Operation Mode.

D. Co-ordinate the elevator control equipment with the Elevator Smoke Detector System (if applicable) for Automatic Elevator Recall to assure a complete operable automatic recall system.

E. Drawings and control circuit diagrams shall be submitted for approval.

2.2.5 Group Automatic Car Operation: Make provision for a supervisory control system, including automatic dispatching, whereby selected car, at designated dispatching points, automatically close their doors and proceed on their trips in a regulated manner.

a. The passenger elevator group shall be served by one (1) push button rise in the same location as existing. A card reader shall be incorporated within the vertical push button riser at the ground floor for car access. The activation of this car reader shall allow the registration of an up hall call to gain access to the car interiors.

b. Provide swing car station in the fixed return panel.

c. Pressure on a car call or landing push button shall call or dispatch a car to that desired landing when the interlock and car gate circuits are closed.

d. Provide an adjustable time limit (Car call dwell time and Hall call dwell time) to hold a car at a landing where it has stopped for either a car or hall call as specified.

e. Operation of the "KEYED STOP SWITCH" shall not interfere with registered car or hall calls. After the switch is released, the car shall resume normal group operation.

f. Provide a new Pana 40 Plus 3 D door protection unit for each car with a solid state signal output or an approved equal. Nudging with reduced door pressure shall be provided as part of the controller design along with the related nudging buzzer. During the door opening cycle the breakage of the door protective field shall result in the reduction of the car or hall call dwell times as specified.

g. Provide an adjustable load weighing device (3 load cells) incorporated within the car top cable hitch plate or as approved. These load weighing devices shall have at least 3 output signals that represent different loads in the car. Replace all the existing the rubber platform isolation pads with new on all cars. The use of Nylube or K-Tech load weighing crosshead mounted strain gauges is prohibited. Multiple output load range signals are required to perform various signal functions. Design system to bypass registered landing calls when the car is loaded over an adjustable range from 60% to 80% of its rated capacity load independent of the weight of the hoisting ropes, traveling cables, and cab. The device shall not prevent operation if the car is loaded beyond the preset load value and not above capacity load. The device shall operate to automatically bypass hall calls until enough passengers or load leaves the loaded car to reduce the load below the preset value. Bypassed hall calls shall remain registered until they are answered. If the device detects an over capacity load, the car shall not start and the brake shall not pick. During this over capacity load condition an audible and visual signal in the car shall remain active until the over load condition has been removed. The device shall also reduce main lobby dispatch time when a pre-determined number of passengers load the car. The load weighing device shall have the design ability to maintain a long term (1 year minimum) consistent accuracy of 50 pounds without the need for re-calibration.

2.3 **GROUP SUPERVISORY SYSTEM BASIC REQUIREMENTS**

2.3.1 The group supervisory control system shall govern the movement of the individual cars in the two (2) car group in a fully zoned or allotted signal system, to provide the maximum efficiency in serving the varying traffic demands, and automatically change the method of dispatching or sending cars to various levels of the building, to provide an effective response to the landing calls of prevalent traffic. The system shall function to accommodate the anticipated varying traffic demands and be sufficiently flexible so that it can be modified to accommodate changes in traffic demands.

a. Arrange the system to maintain movement of cars to satisfy all traffic demands that occur throughout the day. The system shall function on the basis of conditions at the present time and not on conditions as measured in a previous time period.

b. Any car, after satisfying all car and landing calls in its direction of travel, shall become available for immediate dispatch to any floor where demand exists regardless of location or direction of travel. No car shall make a trip to either terminal unless a demand exists at that terminal. Car or hall call demands shall have a preference over a car zoning command.

c. The system shall always dispatch an available car to the ground dispatching floor when no other car is at or is approaching that floor.

d. Select car for dispatch by non-sequence selection system. The system shall select from available cars and assign a car for loading. Cars shall be selected in the order of arrival at the dispatching floor.

2.3.2 Two Way Dispatching System: Two way dispatching shall function during the periods of appreciable traffic demands in both the "UP" and "DOWN" directions. The cars shall be dispatched "UP" or "DOWN", to respond to the prevailing traffic demands. Each car shall answer unassigned landing calls ahead of it in its direction of travel until all calls not subject to load bypass have been answered. The method of dispatching shall include:

a. Dispatching the cars from predetermined zones shall consist of an approximate division of the floors served by the number of elevators in the group, unless the anticipated traffic demands should dictate otherwise. A car, after responding to the last demand in an unoccupied zone, shall become the available car for that zone at that floor. There shall not be a pre-assigned park floor within a zone, the car shall park at the last car or hall call demand within that zone. Other cars that become available shall be assigned to other zone. Available cars shall respond immediately to a demand in their respective zones, except an available car shall respond to a demand in an unoccupied zone, or if the demand in a zone exceeds an adjustable pre-determined number, another car shall be dispatched to that zone.

b. Dispatching the cars from landings at which they become available shall require a call, after answering its last call, to become available at the landing at which it made its last stop. Available cars at any landing shall be assigned and dispatched to answer service demands in a manner that shall provide equitable service to all floors.

c. An available car without a demand for service shall park with its doors closed.

d. The dispatching method shall be sufficiently flexible to provide efficient service for two way traffic that becomes predominant in either the "UP" or "DOWN" direction.

2.3.3 Up and Down Peak Design Requirements:

a. Provide a programmable clock to initiate and maintain down peak dispatching during an established period for the departure traffic.

b. Provide down peak automatically whenever the down traffic reaches a predetermined intensity.

c. The zoning signal system shall consist of a division of the number of floors served by the number of available cars or demand excluding the main lobby dispatch car. The signal system shall be so configured that the number of floors assigned to each zone or allotting area can be re-configured dependent upon changes in the floor populations. These car zoning assignments can be changed using the full spectrum diagnostic and adjustment tool that will be provided to the Owner along with the related adjustment manuals that shall be provided under the base building elevator contract. Initially set the zones for the full two (2) car group as follows: One (1) car shall be assigned to the ground floor (G) as the "up" dispatch car and this car shall also respond to the hall call demands at the 1st and 2nd floors. The second car shall zone at either floors 3 or 4 dependent upon it last car or hall call demand. During the time periods when only one (1) car is removed from service the remaining car shall remain at the Ground floor as the "up" dispatch car and shall also respond to car and hall calls at any floor. Include provisions to permit changing these assignments with the use of a hand held programmable tool. The cars shall reverse at the highest call within their respective zones. Only high zone cars shall respond to registered up landing calls in high zones, except such calls shall be served by not more than one car when down landing calls are being bypassed

d. Monitor the time for each "DOWN" landing calls served by the group of elevators. Should "DOWN" landing calls remain unanswered for a predetermined and adjustable time of approximately forty-five (45) seconds during the down peak traffic period, the lowest such landing call shall be answered by the first up traveling car without higher car calls. The car shall reverse at that floor and respond to "DOWN" landing calls below.

2.3.3.1 Up Peak Dispatching System: Up peak dispatching shall function when traffic demand is primarily in the "UP" direction. Cars shall be dispatched from the ground floor dispatching terminal and then reverse at the highest call. Both cars shall be selected for loading and only the selected car shall have "UP" landing lantern illuminated and its doors open. If another car arrives without "DOWN" traveling passengers, it shall park with its doors closed until the load car closes its doors preparatory to leaving the dispatch floor. After passengers leave an arriving car, the doors shall close until the load or dispatch car has left the floor. Cars shall be dispatched when loaded to an adjustable value that shall be initially set at 60% of capacity. Provide a seven (7) day programmable clock to initiate and maintain up peak dispatching during an established period for the determined incoming traffic demand. If at any time during this period, a car is not available at the lower dispatching terminal for loading, a down traveling car shall automatically bypass landing calls until it arrives at the lower dispatching terminal. A keyboard entry shall be available in the signal system that shall assign either one (1) lobby car during off hours or two cars during up peak.

2.3.3.2 Down Peak Dispatching System: Down peak dispatching shall function where there is a preponderance of down demand traffic. Cars shall be dispatched up from the lower dispatching terminal immediately upon expiration of a minimum door open time for passenger transfer at their lowest call, and unless otherwise

specified, shall reverse at the highest call. Provide means to either cancel or prevent the registration of car calls for landings above the car by passengers who are leaving the car at the lowest dispatching terminal.

a.. Monitor the time for each "DOWN" landing calls served by the group of elevators. Should "DOWN" landing calls remain unanswered for a predetermined and adjustable time of approximately forty-five (45) seconds during the down peak traffic period, the lowest such landing call shall be answered by the first up traveling car without higher car calls. The car shall reverse at that floor and respond to "DOWN" landing calls below.

2.3.4 Off Hour Dispatching System: Off hour dispatching shall function when the traffic demands subside to a degree of very light or inactive status. As the cars become inactive, they shall park with their doors closed in their assigned zone or seek an unoccupied zone. One dispatch car shall be parked at the ground floor with its doors closed and load light illuminated. Only with the use of a security card reader in the ground floor hall call push button assembly shall access to the dispatch or any car can be possible.

2.3.5 Independent Service: Provide a key switch in the car station service cabinet, operation of which will transfer the operation to Independent Service. When the car is on Independent Service, it shall respond to all in car signals, but shall not respond to landing calls. Doors shall open automatically and shall be closed by constant pressure on the door close or a car call push button. If the button is released before the doors are fully closed, they shall reverse and reopen. If one car is removed from the group to Independent Service, the remaining car shall answer all landing hall calls. In the event there are no cars remaining in group operation, hall calls shall not be allowed to register.

2.3.6 Car Readers: Provide provisions in the car operating panel for the installation of card readers in both cars. Include the required programmable logic for card reader interface. This shall include relay contact or solid state output signals for floor selection (one per floor) as well as an output to notify the elevator controller when the security system is operational. These signals shall be terminated on a terminal strip located at the designated security control panel location. The elevator contractor shall be responsible for all wiring between the elevator controllers and these terminal strips. Emergency firefighters' service operations shall over ride this security feature.

2.3.7 Hall Call Readers: Provide provisions and related wiring in the ground floor hall call push button fixture for a card reader. Co-ordinate wiring type required with security contractor.

2.3.8 Car Out of Service: The signal system shall be provided with a car out of service feature. This feature shall allow through the use of any keyboard entry to remove individual cars from automatic service. Once a car is removed from service it shall return to the ground or other assigned floors after responding to all its car and hall call commitments. After a car returns to the ground or as specified floor it shall open its doors only if a registered ground floor car call is registered. If a ground floor car call is registered it shall open and immediately close its car doors without normal dwell times. The ability to register car calls will not be possible, only the door open button shall then remain functional. If a car returns to the ground floor lobby without a ground floor car call registered the car shall park at that floor without opening its doors and only the door open button shall remain functional. Emergency Fire Recall Operation shall over ride this feature.

2.3.9 Anti-Nuisance Device: A reliable monitoring device shall be provided for each passenger elevator to determine when registered car calls are in excess of passengers entering the car. When the monitoring device determines that the car calls registered are excessive, all calls shall be cancelled and passengers shall then be required to re-register their car calls. This device shall function upon accurate input signals from the car load weighing system.

2.4 **GROUP SUPERVISORY SIGNAL SYSTEM (GENERAL REQUIREMENTS)**

2.4.1 The following considerations must be accommodated in the group supervisory signal system provided and installed in order to provide the desired operation in addition to the above basic requirements:

a. An up dispatch car shall be located at the ground level.

b. The signal system shall be designed so as to compensate for a reduced number of cars in group operation at any one time. This system must expand the number of floors within a zone or allotting area, dependent upon the number of cars in group operation. In any case, each floor will be incorporated within or attached to an active zone or allotting area, even if only one car remains in group operation. The utilization of failure timers to provide service to hall calls outside an active zone shall not be accepted.

c. The signal system shall be designed for selective-collective operation regardless of the number of active cars within the group, ranging from two (2) to only one (1) car.

d. The signal system shall be designed so that zoning shall not have preference over selective and sequential response to hall or car calls. Cars shall not zone before responding to a sequentially established hall or car call unless a demand is established at that zone floor.

e. Cars shall park at any floor within an assigned zone or allotting area. After unloading a car call passenger within a zone, a car shall park at that floor, providing that no other call commitments are allotted. There shall not be an assigned mandatory park floor within any zone or allotting area.

f. The signal system shall be so designed that the selective-collective mode of operation of any car within the system shall not be negated by a zoning demand.

g. Only one car shall respond to a registered hall call. A signal system which allows more than one car to respond to a single landing hall call shall be rejected.

h. A signal system that allows cars to park at their last assigned demand floor without regard to zoning or allotting shall be rejected. Such a system would allow all cars to park at the same floor without regard to elevator distribution throughout the building.

2.4.2 The group supervisory signal system furnished and installed shall posses and/or provide, as a minimum, the following feature and functional operating capabilities:

a. A group supervisory signal system where each car controller can automatically assume the role of the group supervisory signal system in the event that the primary controller signal system car entered into a failure condition.

b. Hall call destination time preference logic, as opposed to hall call wait preference logic.

c. An allotting system rather than a pure zoning system.

d. Design and fabricated as a microprocessor based system, which shall be capable of evaluating all

operational criteria and selecting the most advantageously positioned car for service in microseconds.

e. Software shall be designed to meet expected traffic demands, which is capable of being re-programmed in response to changes in building transportation needs.

f. Supervisory signal boards that are readily available from more than one supplier in the industry.

g. A system whereby all floors are serviced in the event of hall call signal loss. Multiple button risers within the group if applicable shall be separately fused with separate I/O to registered hall calls.

2.4.3 The Elevator Contractor shall have capability to provide full engineering and programming services for the group supervisory signal system procured herein.

2.5 **GROUP SUPERVISORY SYSTEM FUNCTIONAL REQUIREMENTS**

2.5.1 Supervisory: A microcomputer (microprocessor) control system shall be provided to perform all elevator group supervisory functions. The microcomputer shall be properly shielded from line pollution and shall be designed to accept software reprogramming.

2.5.2 System Operation: Heavy Up Traffic - There shall be one (1) dispatch floor at the first or ground floor which is the main entrance to the building. The system shall automatically return available cars to this dispatch floor. When at a dispatch floor, the car shall remain for sufficient time (field adjustable) from five to fifteen seconds, to load passengers. This time shall be capable of being reduced by measuring the frequency of interruptions of the door protective field or load weighing. The cars shall travel upward, serving all car calls and allotted landing calls, and shall reverse at the highest hall call landing or car call landing and return to the dispatch floor. Level 2 shall also be served by this ground floor up dispatch car.

2.5.3 Car returning to the dispatch floor shall open doors if designated as load car, or to discharge passengers, in which event the doors shall re-close as soon as passengers have passed through the door protective field.

2.5.4 Inter-floor Traffic Control: To achieve a proper balance between service to the dispatch floor and to inter-floor traffic during heavy up traffic conditions, Inter-floor Traffic Control shall cause cars to periodically bypass corridor calls to expedite return to the dispatch floor. The software program shall allow Inter-floor Traffic Control to be readily and automatically adapted to changes in the building traffic demand.

2.5.5 Light to Heavy Two Way Traffic: When light traffic conditions exist, the signal system shall distribute the cars throughout the building in zones to reduce the travel time to hall calls.

2.5.6 One car shall be stationed at the dispatch floor with doors closed with an up hall lantern illuminated. With no demand for service after a predetermined time, the doors of this dispatch car shall turn off the hall lantern and the car shall park. Upon registration of a hall call, the signal system shall scan each car and allot or assign the call to the car with the least bias count at that instant, that is, the car which can provide the best total service for the waiting passenger's destination time. The entire allotment sequence shall be accomplished in microseconds. Cars responding to hall calls shall be analyzed to determine the ability of individual cars to serve a particular hall call. These service factors shall be:

a. Car on independent service, inspection or in a failure condition and therefore, unable to serve

landing calls.

b. Car loaded to or beyond 70% capacity.

The above factors shall negate the allotment of these cars to hall calls.

The following factors shall be adjustable over a wide range to suit the changing requirements of the building. Each factor shall be a bias or count against allotment to a particular car and the car with the least count shall be assigned to landing call.

c. Where incoming dispatch floor is relatively steady, this factor shall be biased heavily.

d. Distance from car to landing call.

e. Car stopped at floor, loading or unloading, or idle shall be biased to favor allotment to a moving car because of time loss due to door closing and acceleration time of a stopped car.

f. Car call stops registered within each car ahead of the landing call to be allotted.

g. Landing call stops already allotted ahead of the landing call to be allotted.

NOTE: The factors referenced in subsections above shall be biased to favor allotment to the car with the least stops, assuring optimum destination time.

h. Car call stops already registered in each car beyond the hall call to be allotted.

i. Landing call stops already registered to each car beyond the hall call to be allotted.

NOTE: The factors referenced in the sections above shall be biased to favor allotment to the car with the least stops already committed beyond the landing call, assuring optimum destination time, not just wait time, for all waiting passengers as well as passengers already in the cars.

j. Delayed car due to unusually long time for loading or unloading, interference with door protective devices, or other reasons shall bias against further allotments to the car until operation is resumed. Landing call stops in the car's Demand Memory shall be re-allotted to the other car.

k. A.C. power off.

l. Load in cars shall be biased to favor allotment to car with the least car calls or light loads.

m. Coincident Car and Hall Call: Each hall call registered in the system shall be stored in the hall call memory until the car calls in both cars are scanned for the possibility of allotting the hall call to a car already committed to stop at that floor in the proper direction. If the condition exists, this factor shall be biased heavily in favor of allotting a coincident call. When a coincident call is allotted, only the hall call shall be counted.

2.5.7 Reallotment of Hall Calls: A registered hall call, when answered, may result in loading one or more passengers with one or more destinations. All hall calls in a car's Demand Memory shall be re-examined when any of the following events occur:

a. Registration of car call.

b. Door starts to close.

c. Car delayed at landing (or failure).

d. Car fully loaded.

e. Interruption of door protective device.

f. Additional hall call or calls.

2.5.8 Allotment Program: If the service to any hall call in the car's Demand Memory can be improved, this fact shall be recognized by the Allotment Program and such hall call(s) shall be re-allotted to another car. The re-allotment shall always be done on a converging basis, to improve service, and shall be biased on the same factors as a newly registered hall call. Hall calls in the proper direction shall be canceled from a car's Demand Memory by another car stopping for a car call at that floor.

2.5.9 Dispatch Operation: Dispatch operation shall establish priority service at the dispatch floor. Dispatch operation shall insert a demand into the system that shall call a car to that floor. The responding car shall accept dispatch status upon arrival. The operation at a dispatch floor shall be as follows:

a. Based upon security concerns a car with a dispatch status shall maintain its doors closed with an up hall lantern illuminated.

b. A car shall be removed from dispatch status when a car call is registered after a pre-determined time period.

c. Removal from dispatch status shall extinguish the hall lanterns. This shall allow the registration of another demand.

2.5.10 Heavy Outgoing Traffic: Hall calls shall be allotted on the same bias as described under Subsection 140000.2.5.8 above. During periods of intense outgoing traffic, dispatch operation shall be discontinued and all cars shall be available to serve corridor calls above the dispatch floor. Cars with pre-selected percentage load shall bypass all hall calls, and any calls allotted to such cars shall be re-allotted as described above. Down hall calls shall be timed to assure service to calls that may be bypassed by cars with bypass loads.

a. Time out calls shall be assigned to the most advantageous car. The assigned car shall accept one time out call and shall be inhibited from accepting further allotments until the call is canceled. The call may, by coincidence, be canceled by another down traveling car, in which event the assigned car shall be immediately available for other allotments.

2.5.11 Fail Safe Protection: If there is a failure in the microcomputer supervisory control signal system, the cars shall automatically switch to another controller, to a separate selective-collective control signal system independent from the failed controller microcomputer, shall continue to provide service. If the system loses the hall call push button circuit, then a wild car sequence should commence whereby service is provided to each floor until normal hall call service is restored.

2.5.12 Continuity of Service Delayed Car: The length of time that a car has its door power applied without the door becoming completely closed shall be monitored. If this time becomes excessive, the "Door Close" signal shall be removed and the "Door Open" signal shall be activated. When the door becomes fully opened, the "Door Close" signal shall again be applied and the door closing time circuitry shall become activated. This cycle shall continue until either the car is manually removed from group service or the doors become completely closed. If the latter condition occurs, the car shall be returned to group service operation.

a. The length of time the car door remains open shall be monitored. If an obstruction as detected by the protective field prevents door closure for an excessive period of time, the car shall be removed from group service and a signal shall be activated to indicate this condition. When the obstruction is removed and the door becomes completely closed, the car shall be returned to group service.

2.6 **SYSTEM EQUIPMENT AND CHARACTERISTICS**

The system for the group of elevators shall consist of the necessary interface equipment and centralized supervisory equipment.

2.6.1 The signal supervisory control system furnished and installed by the Contractor shall be the product of one manufacturer of established reputation satisfactory to the Architect/Owner. If the manufacturer of such equipment is other than the Contractor, the overall responsibility for coordination of its design and interfacing all equipment successfully thereby providing satisfactory operation of the completed installation, shall rest with the elevator contractor.

2.6.2 If the manufacturer of such equipment is other than the Contractor, the overall responsibility for coordination of its design and interfacing all equipment successfully thereby providing satisfactory operation of the completed installation, shall rest with the elevator contractor.

2.6.3 Loss of Power: After a power failure condition, the supervisory system shall be capable of restarting normal operation when normal power is restored.

2.6.4 Microcomputer Panel: The supervisory signal system for the group of elevators shall be contained redundantly in each controller. Each controller may act as a stand-alone signal system for the group in the event of a failure of the designated primary signal system. The signal system shall have the logic whereby the signal logic shall be automatically transferred from one controller to another within the group. The elevator supervisory control shall be a software program located in the memory of each individual car microprocessor.

a. The printed circuit modules containing the integrated circuit elements and other electronic equipment shall be plugged into pin receptacles. The wiring between all pins to adjacent receptacles shall be connected by a controlled automatic wiring machine, or as approved.

2.6.5 The voltage requirements of the elements in the cabinet shall be adapted to the building supply voltage through step down/ up transformers. Autotransformers or power transistors or zener diodes are prohibited.

2.7 **ELEVATOR MONITORING SYSTEM**

2.7.1 Provide a 17" Color LCD (1280 x 1024) Resolution Display for the group of elevators which shall be provided as an integral component of the supervisory signal system. This display shall depict the group car status, car and hall call registration, car direction, car position and the allotment or assignment of hall calls. Provisions shall be made for the connection of two (2) additional LCD and keyboards outputs ports for future remote locations.

2.7.2 Monitoring and Diagnostic System:

a. General: Provide on-site and remote monitoring and diagnostic functions. Provide all associated hardware, software, wiring, conduit and manuals required for the installation of the system.

b. Remote Monitoring Stations: Provide provisions for two (2) future LCD monitoring stations. These remote monitors similar to the machine room monitor shall display the individual group or individual car status of each elevator and each registered car and hall call. The computer shall down load information to a stick drive and printer to produce hard copies of the data. Provide memory capacity for at least the immediate 30 days, 24-hour periods, in hourly blocks of 15 minute segments, running from hour to hour (i.e., 7:00 a.m. to 7:00 a.m.). These future remote stations shall display and accumulate, for the Owner's retrieval and use, information for the following operating conditions:

1. Summary of hall call registration events by floor, direction, and duration, totaled in 15 minute and 60 minute blocks with breaks made on the hour using an internal clock.

2. Indication of hall call registration duration averaged for each 15 minute and hourly periods.

3. Indication of percentage of calls answered within 30 and 60 seconds in each 15 minute and hourly periods.

4. Indication of time periods during which individual elevators are not in group operation.

c. Machine Room Controller Station: Provide one color LCD display and accessories to maintain the group of elevators which shall include items such as CPU, keyboard and cable required to provide the specified functions. A Service Tool or device shall also be provided, for the machine room, to simulate in car operations and to run each elevator from the machine room. Each color LCD monitor (Security Station and main lobby information desk shall display the following operating conditions:

1. Car position indicator for each car.

2. Location and direction of hall calls registered.

3. Indication to show allotment of hall calls to an individual car.

4. Indication of calls registered within each car.

5. Direction of car travel.

6. Time clock and temperature of elevator machine room areas.

7. Indications individual to each car to show:

   a. Car in group service.

   b. Car out of group service.

   c. Car on Inspection service.

   d. Car on Independent service.

   e. Car turned off.

   f. Car bypassing with 70% loading.

   g. Opening or closing mode of car doors.

   h. Car failures: Detected faults are to include but not limited to the following: phase faults, control fuses, brown out, door lock, gate switch, stop switch, governor switch, up and down final, safety and tape switch, AC VVVF drive unit failure, re-level, door protective field fault, fire service, up and down limit, over speed, door operation failure, clipped door lock, car out of service, independent and inspection modes, and any other safety circuit device not mentioned.

   i. Light indications for special features.

   j. Car over load condition and shut down.

   k. Car on Emergency Power.

d. The Contractor shall provide a hardware and software package to provide a full menu driven screen, customized reporting, auto dial-out mode, and auto-call mode for gathering, reporting and reviewing data at a programmable desired time. The software shall receive and interpret alarm signal displays.

e. The Contractor shall provide all training and instructional manuals required to place the monitoring and diagnostic system into operation.

f. The individual car "out of service" lobby park key board entries shall be available when activated to return each elevator to the ground dispatch floor to open and close their doors and to be removed from normal group operation. The car shall remain with its doors closed with only the in car door open button functional.

g. Provide an alarm signal that shall be registered on all remote and machine room monitoring stations that shall identify any elevator that has left normal group operation. This signal shall identify a car that has entered into a failure condition or has been taken out of service. This alarm signal shall be both audible and visual. The alarm signal may be turned off with keyboard entry but the visual indicator shall remain pictorially on the LCD Display. The failure audible and

visible signal shall be activated when any of the five (5) below failure conditions take place:

Failure Conditions

1. Car is on inspection.
2. Car is on independent.
3. Safety circuit is open.
4. Car stops between floors.
5. Car enters any failure mode.

Once any car enters into a failure condition, the visible signal shall remain on the LCD Displays but the audible signal may be turned off with a keyboard entry. This signal shall remain until the car has been returned to normal group operation.

2.8 ELEVATOR MACHINES

2.8.1 The existing Thyssen Krupp Model GD 1 geared machines currently have DC drive motors powered by the DC output from the AC / DC motor generator sets. The AC / DC motor generator sets shall be removed from the site and the existing DC drive motors shall be replaced with new Imperial 15 kw (20 hp) AC Drive Motors with a custom brake coupling to interface with the machine worm gear drive shaft.

2.8.2 These AC Drive motors shall be aligned with the machine drive shaft with a custom coupling as provided by MCE / Imperial.

2.8.3 The hoisting machine drive motor shall be of the alternating-current variable voltage variable frequency with flux vector control, which shall develop the required high starting torque combined with low starting current. The motor design shall be of the cantilevered type. The AC motor size shall be 15 HP (20 hp) minimum. The motor shall be suited in all respects to the variable voltage and variable frequency with torque compensation control hereinafter specified and shall be of a rugged design, with all parts capable of meeting the severe requirements of passenger elevator service. The stator windings shall be form or spool wound or shall be permanent magnets. The rotor shall be electrically and mechanically balanced, and the traction sheave and brake drum shall be mechanically balanced with the new motor coupling. The speed of the motor, when operated with the controller in full-speed position, shall not vary more than 3 percent from the normal rated speed under all loading conditions within the capacity range. The insulated resistance between conductors and the frame of the motor shall be not less than one meg ohm. All dielectric materials shall successfully pass a breakdown test of 1500-volts, 60-cycle alternating current applied for 1 minute.

2.8.4 The AC drive motors shall be rated at 240 starts per hour under the following conditions:

1. Balance each car at precisely 40.0 with capacity load of 2,500 lbs.
2. Prior to performing the heat test adjust each car shall be calibrated as related below prior to the test:

   Door Close Time 2.4 seconds

Car Start Dwell Time	0.2 - 0.4 seconds maximum
Brake to Brake Time	4.3 seconds 3.66 m (12' 0") reference
Door Open Time	1.6 seconds
Car Call Dwell Time	6.0 seconds
Total	15 seconds = 60 x 60 / 240 starts/hour

3. Place a full capacity load in test weights 1588 kg (3,500 lbs) in one car.

4. Turn the elevator power off for a minimum time of four (4) hours. This time period is required to realize ambient temperature of the drive motor to be tested. Measure and record this ambient temperature of the machine with three recording thermocouples 1) One thermo couple on the top of an upper stator winding 2) One thermo couple on the top of the motor frame and 3) One thermo couple on the top of the brake winding. (The ambient temperature rise shall be measured and recorded in degrees Centigrade C every 5 minutes until a straight line temperature is realized.

5. With 240 starts per hour the heat rise of the stator windings, motor frame and brake windings shall not exceed 50 degrees C above ambient. This is a motor heat test and not to be confused with a heat testing of the motor winding conductor insulation.

2.9 CONTROL EQUIPMENT

2.9.1 General: Provide solid state "closed loop" modular microprocessor based control equipment to allow complete static logic control for adjusting elevator speed, acceleration, deceleration, leveling and stopping. The elevator control shall be a variable voltage variable frequency (VVVF) drive with automatic leveling and flux vector control. The system shall be designed to prevent damage to the motor from overload or excess current and to automatically disconnect the power supply, apply the brake and bring the car to rest in event of power failure or safety device activation.

2.9.2 Provide smooth acceleration and deceleration by variable voltage / frequency applied to the hoisting motor with torque compensation and by dynamic braking and stopping before brake application.

2.9.3 Phase Reversal and Failure Protection: Provide means which shall not allow power to be delivered to the drive machine in the event of a Phase Reversal, Loss of Phase of Poly Phase alternating current or low voltage which might result in an elevator mal-function.

2.9.4 Solid-State Control: Use solid-state modular microprocessor to provide complete static logic control for adjusting elevator speed, acceleration and deceleration and leveling. To control and transmit logic instructions to the elevator. The Contractor shall submit VVVF drive duty data charts to the Owner for approval prior to fabrication.

2.9.5 Controller Unit:

a. Provide a controller for each elevator. The controller equipment shall be contained in a NEMA 1 rated sheet metal cabinet enclosure so that dust, dirt and water shall not interfere with panel components. Provide enclosure with lockable hinged doors. Provide ventilating louvers and an exhaust fan to dissipate heat out of the controller.

b. The printed circuit modules containing the integrated circuit elements and other electronic equipment shall be plugged into pin receptacles. The wiring between all pins to adjacent

receptacles shall be connected by a tape constructed by an automatic wiring machine, or as approved.

c. All panel wiring shall be neatly formed and tied. All leads except for control and signal circuits shall be provided with either solder or solder less lugs. Control and signal wires shall be brought to accessible washer type or solder terminals or studs. The wiring of the panel shall be the flame-resisting type.

d. The power circuit relay and contactors shall be equipped with contacts designed to prevent fusing.

e. The voltage requirements of the elements in the cabinet shall be adapted to the building supply voltage through step-down transformers with numerous secondary output voltage taps.

f. Provide coordinated fault protection which protects the entire power circuit against short circuit conditions, limited faults arising from partial grounds, partial shorts in motor armature, or in the power unit itself, protects drive motor against sustained overloads and provides semiconductor transient and incoming line phase sequence protection.

g. Mount the control equipment on a panel of approved material that shall be securely mounted on self-supporting frames.

h. Controllers containing solid-state devices and memory equipment that shall be designed for a high level of noise immunity, properly shielded against line pollution, RF, and high temperature operation.

i. Provide isolation and suppression protection for the proper operation of solid-state devices and components.

j. Acoustical noise measured from any location approximately 5’ from the elevator equipment, in the machine room, shall not exceed 70 dba during normal elevator operation. Structure borne noises shall not exceed 65 dba measured at the top landing hoistway door.

k. Ground all non-current carrying metal parts in the machine room in accordance with NFPA 70. Provide total equipment BTU output for each elevator.

l. Prior to contract award the elevator contractor must submit certification that the control equipment has been certified for "Fire and Shock" by both NFPA 70 and UL.

2.10 OPERATION PANELS AND SIGNAL FIXTURES

2.10.1 Construct stainless steel faceplates for landing call push button with flush mounted elements, with not less than a 1/8" thick dimension. The cover plates shall fasten to a separate sub-plate that shall be tapped to receive the cover plate and related fastening screws. The push buttons and key switches shall be fastened to this sub-plate. Any hall call button configuration which has its button elements and switches fastened to the cover plate shall be rejected. Install the car operating elements at dimensional code conforming elevation. Engrave the following statements over the car panel operating push button elements, switches and indicator lights in both cars:

a. The following engraving as approved, shall appear over the main return car operating push button elements, switches and indicator lights:

CAPACITY 2,500 lbs

[Engraved car capacity shall have a minimum of 3/8" letters - backfill letters with red paint]

b. The following engraving shall be incorporated within the main car station operating push button elements, switches and indicator lights:

CAR 1 or CAR 2

[Engraved car number shall have a minimum of 1/2" letters]

c. The elevator number shall be engraved on the main car station above the operating push button elements, switches and indicator lights:

d. The no smoking graphic as shown provided on the main car station as required by the applicable building code.

e. Provide a flush state inspection certificate with window in a frame in the swing cover of the keyed service cabinet door in the main car station. If it is not necessary to post this state inspection certificate within the cab then insert this statement in this window:

The elevator inspection certificate
is available for review at the
building management office.

2.10.2 Push Buttons: Buttons shall be so designed that a spring shall take up the initial pressure from which contact is made and further pressing shall seat the button on or in the sub plate. Call buttons shall be a minimum of 3/4" in the smallest dimension. Moderate pressure only shall be required to activate the push buttons. Push buttons that require excessive pressure to activate their related function shall be rejected. Submit sample for approval. Landing call and designated car push buttons shall also serve as registered call signal indicators, with the function indelibly and legibly identified by legend or arrow. When a landing call button is operated, the button shall illuminate to indicate that the call has been registered. The signal shall be extinguished when a car has responded to this registered hall call. The light for each indication shall be enclosed in a light tight compartment and arranged to illuminate only one indicator. The landing call push button cover plates shall be 1/8" thick with a # 4 brushed Stainless Steel with Innovation type PB 30 or approved equal Red LED Down and Green LED for Up illuminating ring with a concave center.

a. Car push buttons for cars 1 - 2 shall be Innovation type PB 30 and shall have stainless steel die cast raised letters and Braille symbol (Medallions) as produced by Stencil Cutting and Supply Company. Provide type CW1 satin stainless steel base with CW2 satin stainless steel floor or symbol designation inserts. The CW1 base and the CW2 insert shall be flush mounted in the return panels to the left of the push button and operational elements that shall fit flush within the confines of the CW1 base. Submit total sample configuration to the architect for approval. The car call push button return panels and header shall be 14 gauge brushed # 4 stainless steel as

identified on the architectural drawings. Flush Micro-Motion white LED illuminating ring push buttons with a concave center with two (2) micro switches per button element. The return panel shall be countersunk to receive the push button elements.

b. The hall call push button fixture cover plates shall be fabricated from 1/8" minimum thickness stainless steel with a brushed # 4 finish as shown on the architectural drawings. These cover plates shall include the following: Hall call push buttons, emergency power light, emergency power selector switch, communication failure light and switch, Emergency Recall Operation Switches and related indicator lights on the ground designated fire floor levels (Verify with local Fire Marshall). Each push button cover plate shall be engraved on each floor with the verbiage "In Case Of Fire Elevators are Out of Service" with related Pictograph engraved. Flush Micro-Motion Red LED for down and Green LED for the up direction illuminating ring push buttons with a concave center with two (2) micro switches per button. Submit proposed configuration to owner for approval. The hall call push button elements and switches shall be mounted on a sub plate independent from the cover plate. Push button or key switches that are mounted to the cover plate shall be rejected. The elevator contractor shall provide all the wiring required to realize a completely functional emergency communication system.

c. There shall be one (1) push button riser for cars 1 - 2.

d. The elevator contractor shall be responsible for all cutting and patching required to install new hall call push button fixture boxes.

e. Cut outs in the elevator lobby walls for the new landing door push button boxes located at a vertical elevation of 42" to the center of the hall call fixture push buttons AFF. Also provide new entrance frame cut outs (if required) for the new key access switch boxes that will be located behind the side of the entrance frames at the top and bottom terminal floors with hoistway access covers so that only the lock feral cylinders are visible from the landing entrances. The patching of holes from the old fixture boxes and the wall re-finishing to match existing shall be the responsibility of the elevator contractor.

2.10.3 Car Operating Panel for All Elevators: Place the main car operating panel on the right side of all center opening door configurations and the auxiliary car operating panel on the left side. Both the main and the auxiliary car operating panels shall contain all controls for the type of operation specified in Paragraph "Car Operation and Control". The centerline of the top button in each car station shall not be more than 48” above finished floor. The car panel shall contain the following:

a. Devices in the exposed section:

1. Illuminated LED operating buttons identified to correspond to the landings served by the elevator on both the Main and Auxiliary (Alternate bid 1) Car Stations.

2. "DOOR OPEN" and "DOOR CLOSE" buttons that function during normal operation on Main and Auxiliary Stations. A door close push button that functions only during Emergency Operation and Independent Service shall be rejected.

3. Key operated Phase II emergency In-Car Operation Switch and a illuminated visual and audible signal (Main panel firefighters' cabinet) and a car cancel button.

4. Alarm bell push button (Main and Auxiliary (Alternate bid 1) Panels) that shall initiate

both the alarm bell and also activate the "car call" function in parallel operation with the car call push button.

5. Over Capacity Light and Buzzer (Main Panel).

6. Key Stop Switch (Main Panel).

7. Two-way communication device with full duplex operation with both visible and audible signals (Main panel) meeting the requirements of ASME A17.1. Flush mounted. Provide "off set" speaker grille with in main swing return panels. A "Help" emergency call push button with illuminated collar and related verbiage shall be provided identical in design to the push button elements.

8. Provisions for proximity type card reader and related wiring on the main and auxiliary) car station as approved.

b. Devices in the locked service cabinet:

1. Key operated inspection switch to transfer car control to key access for top of car inspection operation, pit access and to prevent operation of the car from the control panel.

2. Key operated independent service switch where the key is removable in either position.

3. Four position three (3) speed (Verify the existing fan speeds) keyed fan switch.

4. Key operated door protective field switch. When turned off the car doors shall close at reduced nudging speed.

5. Nudging Buzzer.

6. Ground fault duplex 120 volt AC volts convenience outlet with ground.

7. Car light key switch with "on" and "off" positions.

8. Keyed operated emergency light test switch that shall disconnect all power from normal car lighting.

2.10.4 Car Certificate Frame: Provide a flush state inspection certificate window with rear frame in the keyed access service panel under the main operation as relate above in 140000.2.13.1.

2.10.5 Switches and Devices: Provide EX Series switches and devices in the car operating panels. Each device and its operating positions shall be legibly and indelibly identified. Locate car dispatching buttons in identical positions in car operating panels for corresponding floors. The position of car dispatching buttons shall be uniform on both cars.

2.10.6 Car Position and Direction Indicator and Audible Signal: Provide a 16-segment, Red LED Position and Direction Indicator to produce the full range of alphanumeric characters to indicate both the floor position and direction of travel. Individual characters shall be a minimum of 2” high to allow for easy viewing from

all areas of the car. This fixture shall be similar to the LED car position and direction indicator. This position and directional Indicator shall be mounted central in the cab header. This in car position and directional indicator shall be an integral part of the cab entrance header and shall not have a cover plate and hoistway access is required. As the car travels through the hoistway, its position shall be indicated. Change of floor position indicator shall be instantaneous and shall be accomplished approximately midway between floors. Provide an adjustable audible sound as the car passes or stops at a floor, and the corresponding floor designation must illuminate. This audible signal shall have a minimum of 20 dba with a frequency no higher than 1500 Hz. Also provide voice announcement if required by ANSI A117.1.

2.10.7 Hall Lanterns: Retain the existing hall lanterns and provide a green up and red down directional light filter behind each directional arrow or provide Red and Green LED's in lieu of colored filters.. Provide an adjustable audible gong that shall sound once if the car is next traveling up or down at each floor if not existing.

2.10.8 Communication System:

a. Provide all new traveling cable wiring, car wiring, hoistway wiring and wiring from the machine room to the cars for a complete communication system. Master Station shall be located in the elevator machine room.

b. In each cab the activating of either an alarm push button or the activation of the emergency call push button shall illuminate a specific annunciator light and sound an audible signal in the car in accordance with the requirements of ASME A17.1 and shall initiate the two-way full duplex communication system.

c. A car that initiates an alarm signal shall illuminate an annunciator light on a panel in the machine room. Upon receipt of an alarm signal an operator at any of these locations shall be able to initiate a signal that shall cause an acknowledgement light to flash within the car. Two (2) way **full duplex** communication shall be possible between the car and operator.

d. The two (2) way Full Duplex Speaker Phone Communication system shall have the following features:

1. Between any car and the machine room *.

2. A back up to outside phone line shall be required in the event no one in the machine room answers the emergency call from the elevator.

3. The supplier of this full duplex speaker system shall be Vandal Proof Products a division of EMS.

Note: * Master Stations

2.11 **HOISTWAY AND CAR EQUIPMENT**

2.11.1 Existing overhead machine shall be retained and re-used.

2.11.2 Guide rails.

a. All car and counterweight guide rails shall be retained and re-used. All car and counterweight rail fasteners including fish plate fasteners shall be tightened. The running surface of both the car and counterweight rails shall be cleaned to remove rust and any other contaminates.

b. Pit Equipment:

1) Buffers: Drain the oil from both the car and counterweight buffers and flush out with cleaning compound and refill with new OEM buffer oil. Verify that the existing Westinghouse car and counterweight oil buffers Model 419-5006 R7591 B1with a 8-1/2" stroke can be re-used to operate at the new car speed of 350 fpm. Provide new car and counterweight buffers if required to accommodate 350 fpm and the related impact loads.

2.11.3 Seismic Requirements:

a. Install seismic plates under the car top and counterweight top and bottom new roller guide assemblies. ASME A17.1 2010 Section 8.4.5, Section 8.4.7.1.2

b. Provide car safety seismic guarding of equipment in accordance with ASME A17.1 2010 Section 8.4.3 if not existing.

c. Install a seismic switch in the elevator machine room and provide related signal-logic. ASME A17.1 2010 Section 8.4.10.1.1.

d. Install a counterweight derailment switch and provide related signal logic. ASME A17.1 2010 Section 8.4.10.1.1. Two (2) lines shall be mounted on the front of the counterweight frame facing the car.

e. Provide seismic equipment requirements in accordance with ASME A17.1 2010 Section 8.4.10.1.2

f. Provide seismic equipment requirements in accordance with ASME A17.1 2010 Section 8.4.10.1.3

2.11.4 Normal Terminal Stopping Devices

a. Upper and lower normal terminal stopping devices shall be provided and arranged to exponentially and automatically slow down and stop the cars at the top and bottom terminal landings, with any load up to and including rated load from any speed attained in normal operation. High speed stops shall not be considered as an exponential slow down. Such devices shall function independently of the operation of the normal stopping means and of the final terminal stopping device. The normal terminal stopping device shall be so designed and installed so that it will continue to function until the final terminal stopping device operates. A normal terminal stopping device that allows the car to enter a final terminal stopping device shall not be accepted.

b. Slow down and normal stopping devices shall be furnished and installed either on the car top of each car or mounted at the terminals in the hoistway enclosed dust proof cases. The devices shall be so arranged that as the car approaches either terminal landing the device shall automatically

bring the car to a smooth stop at the terminal landing. The device shall use either LED, magnetic or other code conforming means to slow down and stop the elevator without the use of mechanical switches.

2.11.5 Emergency Terminal Stopping Device

a. Provide an emergency terminal stopping device that shall independently remove power from the driving machine motor and brake in the event that the normal slow down device and normal terminal stopping devices fails to slow down and stop the car in the intended manner. This device shall use mechanical switches with logic independent of both the normal stopping means and the normal terminal stopping device.

2.11.6 Final Terminal Stopping Devices

a. Provide final terminal stopping devices for the elevators, arranged to automatically stop the car and counterweight within the top clearance and bottom over travels. These devices shall be independent of the operation of buffers and final and emergency terminal stopping devices.

2.12 **WIRING**

2.12.1 Wire in accordance with NFPA 70 NEC. Conductors shall be copper, stranded with moisture and flame resistant outer covering throughout. Provide all new wiring, flexible conduit, rigid conduit and related fittings with moisture resistance provisions as outlined by NFPA 70 NEC. The vertical hoistway duct maybe reused upon approval from the Architect. The minimum size of conductors, exclusive of those which form an integral part of control devices, shall be No. 12 for lighting circuits and No. 14 for all operating, control and signal circuits. Protect all wiring regardless of voltage rating in zinc coated rigid steel conduit, intermediate electrical conduit, electrical metallic tubing (EMT) or metal wire ways and outlet boxes. Flexible metal conduit with a green equipment ground conductor may be used for the short connections not subject to moisture, oil or embedment in concrete. Thread-less fitting shall not be used with rigid galvanized steel conduit. Electrical connections to machinery shall have extra length to permit 2" minimum displacement without damage. All flexible and solid conduit fittings shall have two (2) steel locknuts and threaded insulation bushing on all terminating points. All wiring shall test free from short circuits and grounds and the insulation resistance between conductors and ground of the completed installation shall not be less than 1 meg ohm.

2.12.2 Conductors: Furnish and install all wires and cables necessary for the proper connection and operation of all equipment installed under the elevator contract. All conductors, including control board wiring, shall be in accordance with NFPA 70 NEC requirements.

a. Unless otherwise specified, conductors exclusive of traveling cables shall be stranded or solid annealed copper with 75 degrees C or better insulation. Single and multiple conductor cables shall have a color coding or other suitable identification for each conductor. Unless otherwise specified, no joints or splices will be permitted in wiring except at outlet boxes and on terminal strips. Tap connections may be used in raceways provided they meet all NFPA 70 NEC requirements.

b. Terminal connections for all conductors, used for external wiring between the various items of elevator equipment, shall be solder less pressure wire connectors, in accordance with NEC

Standards or another approved testing laboratory. Connections for wire size No. 10 or smaller shall be of the crimp type applied with an appropriate setting tool.

c. Terminal blocks having pressure wire connectors of the clamp type that meet UL or CSA or another approved testing laboratory requirements for stranded wire may be used in lieu of terminal eyelet connections. Terminal blocks using pierce-through serrated washers will not be acceptable.

2.12.3 Run wiring from each operating switch, safety switch, and control device to terminal strips at the controller, such as to permit easy testing and trouble-shooting. Make no splices. Mark each wire with a numbered adhesive waterproof marker, and mark each group of wires as to destination with waterproof markers. Color code all wires in multi-wire cables. Mark intermediate terminal blocks with corresponding numbers on waterproof labels. Provide waterproof, neat, legible lists showing all wiring runs, color codes and numbers codes. Attach the lists to the controller.

2.12.4 Car Exterior Working Light Circuit: Provide permanently wired auxiliary extension light cord on each car top with a 6' minimum cord.

2.12.5 Traveling Cables: Provide new traveling cables to meet the conductor requirement as identified below. The cables shall be capable of bending 360 degrees with an inside radius of 1' without any permanent set and without cracking of the outer covering. The open loop shall show no tendency to twist upon itself. Suspend traveling cables with non-metallic fillers by looping cable around supports. Install shields and pads necessary to prevent chafing. The loop in the traveling cables shall be not less than 2' unless otherwise approved. Traveling cables shall be of the highest grade stranded, flexible, fire retardant and Type ETT cables with thermoplastic jacket and shall connect from a junction box under or on top of the car to a hatch junction box mounted at a rear corner of the hoistway. Traveling cables shall be in accordance with the requirements of the NFPA 70 NEC Article 620. The traveling cables shall be run in duct or conduits no more than 6' from the first point of car or hoistway support contact. Running travelling cable up the side of the car and securing them with plastic wire ties to the car brace rods, side styles or cross head shall not be permitted. Also running traveling cables unprotected on the car top shall not be permitted. The junction boxes shall be equipped with terminal blocks with identifying numbers for each connection. The cables shall be anchored to avoid strain on the terminal connections. Cables shall be free from contact with hoistway structure, car, counterweight or other hoistway equipment. Each traveling cable shall have spare conductors, in a number not less than 20% of the active conductors, but not less than two spare conductors. All traveling cables shall have the same diameter. Each traveling cable conductor shall have a distinctive color coded outer covering for identification. Terminal blocks shall have indelible identification numbers for each terminal connection. Hoistway junction boxes shall be mounted at a rear corner of the hoistway unless otherwise approved. Provide the following conductors:

a. Shielded conductors sufficient for elevator signal communications between the car and the machine room and devices.

b. At least six (6) shielded twisted pairs of conductors for the security system, six (6) shielded twisted pairs of conductors for the in car LCD Displays, four (4) shielded twisted pairs of conductors for the in car full duplex speaker phone emergency communication system and six (6) shielded twisted pairs of conductors for the Owner's future use. The minimum conductor wire gauge for the above shielded twisted pairs is 18 gauge.

c. Two pair of 12 gauge wires for two (2) 110 VAC 15 Amp circuits to the car.

d. Provide four (4) RG 6 with 20 gauge minimum coaxial cables per car for high frequency signal transmission. (Co-ordinate and verify coaxial type required with security contractor) . Run coaxial cables to a labeled junction box on the car top.)

e. Three (3) four strand fiber 50 u OM4 MM Aqua cables, Commscope P/N: 760088641/R-004-DS-5K-FSUAQ. Provide a 10' surplus coil on the car top and a 10' surplus coil in each elevator controller.

f. In each hoistway provide traveling cables of equal diameter, flexibility and numbers of conductors.

g. If complete freedom from contact with the hoistway construction cannot be avoided, due to sway or position, suitable shields or pads shall be provided to prevent chafing or damage to the traveling cables.

2.12.6 Emergency Communication System Wiring: Provide and install wiring, conduit and terminal strip boxes within each elevator cab.

a. Provide shielded twisted pairs of conductors for the communication speaker that shall be installed in auxiliary car station in the car enclosure.

b. Provide shielded twisted pairs of conductors for communication speaker in conduit from the traveling cable, locate under the car platform or in the operating panel, to a terminal strip box located on the elevator car top. Conductors and shields shall be labeled and connected to the terminal strips for connection to the emergency telephone and communication speaker.

c. Traveling cable conductors for the communication speaker shall be run from the machine room elevator controller in conduit to a terminal strip in a junction box located on the machine room wall. Conductors and shields shall be labeled and connected to terminal strips for connection to the building system.

d. Terminal boxes with terminal strips shall be identified by a red cover and a permanently attached laminated label that reads "Emergency Communication System".

2.13 CONDUIT

2.13.1 Unless otherwise specified or approved, all electrical conductors including low voltage conductors, except traveling cable connections to the car, shall be installed in conduit or metal raceways in accordance with the NFPA 70 NEC. Exposed hoistway wiring of any type is prohibited.

2.13.2 All conduits terminating in steel cabinets, junction boxes, raceways, switches, outlet boxes and similar locations shall have threaded connectors with a steel lock nut located on each side of the terminating material and threaded steel or threaded insulated bushings installed at the end of the fitting thread. Inserted after the fact slip in plastic cone type insulated bushings shall not be accepted.

2.13.3 At ends of conduits not terminating in steel cabinets or boxes the conductors shall be protected by terminal fittings having an insulated bushing to protect opening for the conductors.

2.13.4 Couplings and connectors for EMT shall be made either of steel or malleable iron only, shall be either the

gland and ring compression type or the stainless steel multiple point locking type. All connectors shall have insulated throats. Conduit and EMT fittings and connections using indentations as a means of attachment shall not be used.

2.13.5 All conduits connecting the various items of elevator equipment in the elevator machine room shall be run in concealed positions insofar as practicable. Metal raceways shall be run exposed in readily accessible locations. Such raceways shall be routed in a manner which does not infringe upon minimum vertical or horizontal clearances imposed by applicable Codes and which will not impede the utilization of any existing trolley-hoist systems to move equipment or components from the machine rooms to trap or access doors.

2.13.6 All raceways completely embedded in concrete slabs or floor fill shall be rigid steel conduit. Raceway terminal fittings must provide conductor passageways free from burrs, shoulders or other projections that will reduce internal passage area or cause abrasion of conductors being pulled through. Provide rubber edge material on all internal edges.

2.13.7 Terminal boxes shall be provided for the conduit and wiring connections to all motors.

2.14 CAR AND COUNTERWEIGHT FRAMES

2.14.1 Car and Counterweight Frame: Retain and re-use both the car and counterweight frames.

2.14.2 Guide Shoes: Provide new ELSCO Model B car roller guides on the car top and bottom. Provide seismic plates under the car top roller guide assemblies. Provide new ELSCO Model D counterweight roller guide assemblies on the top and bottom of the counterweight frame. Provide seismic plates under all counterweight roller guide assemblies.

2.14.3 Car and Counterweight Static Balance:

a. Statically balance the car and counterweight frames so that at the center of hoistway travel, with car top roller guides backed off that the car and counterweight side styles shall hang centered of the main rails.

b. Balance the car and counterweight frames so that in this position and with the roller guides adjusted, there is equal pressure on all roller guides.

c. Adjust the roller guides so that at any point in the travel, the pressure of each roller on the running surfaces of the rails shall be between 25 and 50 pounds. Adjust the rollers for equal pressure on the running surfaces of the rail.

2.14.4 Car Safety Devices: The existing car safeties shall be totally dismantled and clean to remove any rust and dirt contaminates. Any worn or damaged parts shall be replaced. After total cleaning and re-assembly of the car safeties lubricate all pivot points and adjust in accordance with manufacturer's calibration recommendations.

2.14.5 Governor: The existing car governor shall be totally solvent cleaned to remove any grease, dirt and rust contaminates. After total cleaning and lubrication of all pivot points calibrate the governor with the use of an analog tachometer to verify that both the electrical and mechanical tripping speeds are set in accordance with the governor data plate and in accordance ASME A17.1 requirements. This calibration shall be

performed by removing the governor rope and spinning the governor sheave with a variable speed drill motor while calibrating both the electrical and mechanical settings. After governor has been totally recalibration install a new lead seals on the adjustment points.

2.15 **ELEVATOR HOISTWAY DOOR AND ENTRANCE**

2.15.1 General: Retain the existing entrance frames and landing sills. Replace landing door panels at all floors with prime painted or a baked enamel of a color as selected by the Architect. These new landing door panels shall be provided with matching 16 gauge sight guards. Provide 16 gauge commercial bronze 90/10 cladding on the new ground floor landing doors. Provide oxidized samples to the architect for approval to match the existing entrance frames and extended transoms. Field oxidization shall be required if sample matching is not approved by the architect. The existing landing door hangers tracks, hanger track headers and rail mounted header supports shall be removed.

2.15.2 Hoistway Entrance Frames: Retain the existing entrance frames at all levels.

2.15.3 Hoistway Entrance Sills: Retain and re-use.

2.15.4 Portable Barricades: Provide full height and full width portable barricade with a lockable swing door that shall be used during the removal and replacement of the existing landing door panels, headers and landing door tracks. This portable barricade shall be moved from entrance frame to entrance frame during the landing door, header and track removal and replacement activities.

2.15.5 Landing Door Headers: Remove the existing hoistway landing door hanger track headers, hanger tracks, main rail header support rods and wall anchors. Provide new bent metal hanger track header with a minimum thickness of 3/16" that is vertically secured with two (2) strut angles mounted at each end of the header with angle brackets at the floor level as required. These strut angles shall be 3" x 3" x 5/16" thick to support the door track header and to fasten the door stop bumpers which shall engage the landing doors 3/8" behind the full open position. These hanger track headers and related strut angle supports shall be equivalent to those as produced by H+B Elevators (612) 721-5031.

2.15.6 Hoistway Door Hangers: Provide new GAL hanger tracks which shall be fastened to the new headers with drilled and tapped threaded holes.

2.15.7 Hoistway Entrance Doors: Remove and replace existing landing doors with new landing doors which shall accept new GAL hardware. These new landing doors shall be provided with baked enamel finish of a color as selected by the Architect to match the existing frames at all floors above the main lobby. At the main lobby provide 8' 6" high landing doors clad with 16 gauge commercial bronze 90 / 10 with oxidation to match the existing entrance frame and header. All new landing doors shall have key access holes with excursion tubes. The existing landing door panels when removed shall be turned over to the USC for disposal.

2.15.8. Hanger Covers: Provide full door travel length entrance door hanger covers made of 14 gauge thickness sheet steel and constructed to permit ready access for servicing hangers. The covers shall be removable in three sections and shall be equipped with means (Flat head or Pan head machine screws) to hold them securely in the closed position. Each section shall be removable without the removal of fastening screws, the covers shall have key hole type holes whereby removal of hanger covers can take place by only loosening but not removing fastening screws. The use of tack screw gun with self taping screws drilled into pre tapped header holes in the header which destroys the pre-drilled taped hole shall be rejected and

all the holes shall be re-tapped and proper flat head screws installed.

2.15.9 Entrance Fascia: Re-use the existing or provide new. Re-condition and reinforce as required for code compliance with 14 gauge thickness sheet steel. Provide intermediate supports as required to limit fascia deflection to a maximum of 1/2" with 150 pounds applied at any point. Fascia shall be fastened with flat pan head screws. The use of hex head or hex head tack screws fasteners is prohibited and if use shall be replaced before Owner acceptance.

2.15.10 Dust Covers: Provide full length dust covers over top terminal headers fabricated from 16 gauge minimum thickness sheet steel.

2.15.11 Field Painting: Dust covers, hanger covers, fascia and car and hoistway toe guards shall be cleaned and field painted in accordance with a color as specified by the Architect.

2.16 CAR DOOR OPERATOR AND HOISTWAY DOOR ACCESSORIES

2.16.1 Retain the existing MOVFR Door Operators and replace the existing door operator arms, car door clutch assemblies and related landing door hardware with new GAL door hardware and related interfacing equipment.

a. Opening and Closing of Car Doors: Car doors shall be 75% open when the car has completed the leveling operation. The doors shall close after an adjustable predetermined time, unless a "DOOR CLOSE" or "CAR CALL" push button is pulsed or the door protective field is broken to reduce the respective dwell time during door opening. A pulsation on a landing hall call push button at the floor where the car is standing with its doors closed shall result in the doors opening. The doors may be reopened from within the car by pulsing the "DOOR OPEN" push button.

b. Provide all new GAL landing door hardware (Do not use GAL products manufactured by ECI a subsidiary of GAL in Toronto. Only source components fabricated in NY) including: landing door clutch rollers, clutch roller lifting arm, related keeper arms, interlock boxes, car and landing door sheaves, steel up-thrust rollers and car and landing door gibs. Re-use existing 2 year old MOVFR GAL door operator and provide new control arms. Provide new car door gate switch and new GAL car door clutch assembly.

c. Door Protective Field: Provide a new solid state Pana 40 Plus 3 D door protective field on the leading exterior edge of the car door panels (Center Opening). This door protective field shall extend the full height and width of the car door opening. Arrange the protective field so that it shall detect a person or an obstruction while the doors are closing upon which it shall automatically cause both the car and the hoistway doors to stop and return to their open position. Doors shall close immediately after the protective field is re-established. The breakage of the protective field during the door opening cycle shall reduce the car and hall dwell time as outlined above.

d. Nudging Operation: The protective door field device shall be so designed that it will become inoperative after a prolonged period of interruption of the protective field or with continuous pressure on a car door open push button beyond a predetermined time interval. In either case, at the end of the predetermined manufacturer's standard adjustable time interval, from fifteen to thirty seconds, the doors shall begin to close at reduced (nudging) speed in conformance with the

requirements of ASME A17.1 and a buzzer shall sound while the doors are closing at a reduced speed.

2.17 **CAR PLATFORMS AND ENCLOSURES**

2.17.1 Passenger Car Platforms. Retain the existing steel stringer platform and steel sub frame. Provide all new rubber platform isolation pads. Tighten the car door sill to the platform as required.

2.17.2 Passenger Car Enclosures: Retain the existing steel shell cab walls and dome.

a. Ceiling: Retain existing.

c. Return Panels: Wrap both car return panels with 16 gauge stainless steel with # 4 brushed finish. The main and auxiliary car stations shall be located within these fixed return panels and shall be hinged with a key lock for easy rear access.

d. Transom: Wrap the existing car header with 16 gauge stainless steel with # 4 brushed finish. Within this new stainless steel header shall be installed a new combination digital position and directional arrows without a cab interior cover plate. A rear cover plate shall be located above the hanger track outside the cab interior.

g. Handrails: Retain existing.

j. Passenger Car Floor Coverings: Retain existing.

k. Cab Heights: Retain existing.

l. Interior Ceiling Height: Retain existing..

m. No trade marks or manufacturers' nameplates visible to the general public shall appear on any piece of equipment.

n. Replace the current 21" (Verify) high car toe guard with a 48" toe guard on each car.

2.18 **CAR COMPONENTS**

2.18.1 Car Doors: Provide new stainless steel center opening door panels for both cars. The car doors shall be of the same and size type as the hoistway doors with both a front and rear solid surface. Car or landing door panels that only have a front surface with a hollow reverse side shall not be compliant. Car doors shall be provided with a SEE door restrictor Model 001. Car door panels shall be equipped with a Pana 40 Plus 3 D van type door protective field mounted on the leading edge of each door panel (for single speed center opening) as related in the installation instructions. If the door detectors are installed recessed on the car door panels they shall be removed and re-installed on the leading edge of the door panels as specified for 3 D operation in accordance with the manufacturer's installation instructions. The car door panels shall be clad with 16 gauge stainless steel with # 4 brushed finish. Gibs shall be replaceable without removing door from hanger track. Provide new car door GAL Hanger track, hanger sheaves, up thrust rollers and door gibs and car door clutch and related control arms.

2.18.2 Car Emergency Lighting Power Package: The cars shall be equipped with an emergency car lighting system consisting of a rechargeable battery, charger, lamp and controlling relay, arranged and connected so as to automatically provide emergency battery powered lighting in the event of car lighting service failure, regardless of the position of the normal car light switch. The battery and relay shall be mounted on top of the elevator car and housed in a sheet steel box with hinged cover and latch. The relay shall be designed for continuous duty service on electric current available for car lighting. The emergency light shall be the activation of two (2) of the normal car down light florescent tubes above suspended ceiling above the main car station. The fixture shall provide adequate illumination to permit the use of the in car communication system and to distinguish the various components on the car operating panel. Shop drawings of the emergency lighting system and components to be furnished shall be submitted to the Architect / Owner for approval. The emergency lighting system shall become active within five (5) seconds and supply power to enough lighting elements to provide 2’ candles of illumination at the car floor for four (4) hours. Provide each fixture with an AC circuit power that shall have the capacity to operate the alarm bell for one hour and shall also be provided with a readily accessible means of testing within the car station. Provide key operated emergency light test switch in the car service panel that shall remove all power from normal car lighting. This wiring logic is the only way to truly test the emergency lighting system. Simply testing the emergency power battery pack with a car panel mounted switch is not acceptable.

2.18.5 Cab Steadier Plates: Replace existing and provide roller type car top steadier plates on cars 1-2. These steady plates shall have three (3) rollers, one riding on each flange of each side style.

2.19 EMERGENCY POWER OPERATION

2.19.1 Power requirements are specified per Division 26 and/or the Electrical Drawings including power transfer and absorption of regenerated power. Verify that the total regeneration power of one fully loaded car traveling in the down direction shall not in total not exceed the maximum regenerative power capability of the emergency power generator. Assume minimum 3/4 regenerative power of full load up current and voltage. Provide all circuitry and wiring necessary to accomplish the following sequence of operations upon the outage of normal power and the initiation of emergency power. All elevators at the same time shall stop and one elevator at a time shall start and return automatically non-stop to the ground floor. After all cars have returned to the ground floor one car in the group shall then return to an automatic operation under emergency power conditions. If for any reason the selected car within a group fails to operate, automatic operation shall be transferred sequentially to the remaining car in the group. Car 1 shall be the designated as the emergency power car. Upon restoration of normal power, all elevators that were available for service prior to the power failure shall automatically resume normal service in sequential starting.

2.19.2 In addition to the automatic emergency power transfer logic as referenced above provide "a manual emergency power selector switch" and related signal light marked "Elevator Emergency Power" fixture assembly within the ground floor push button cover plate. In the "automatic" position under emergency power the car identified shall return to the ground floor and open and close its doors and shut down. In the "manual on" position this car shall return to service under emergency power conditions. Provide new "Emergency Power" selector switch in the main elevator lobby. The current "Emergency Power" transfer switch is erroneously located in the elevator machine room.

2.20 PROVISION FOR HANDICAPPED BARRIER FREE ACCESS

2.20.1 Code of Federal Regulations 28 CFR Part 36, ICC/ANSI A117.1 2008 with the additional requirement of Braille symbols for the visually impaired.

a. Car Control Operating Button and Switch Designations: Provide 0.30" raised standard alphabet characters for letters, Arabic characters for numerals or standard symbols as produced by Stencil Cutting Supply Company Model CW1/CW2 flush mounted as required by ASME A17.1 Place the Braille 1.5875 cm (5/8") high symbols corresponding to the numerals or letters on the elevator buttons located immediately to the left thereof. Alternatively, place the Braille symbols directly below the Arabic numerals. Identify other controls and emergency equipment by raised symbols, including open door, close door, emergency alarm, emergency bell, emergency stop and emergency communication. Submit fixture drawings to architect for approval prior to fabrication.

b. Designations for Hoistway Entrances, Landing Call Buttons and Landing Lanterns: Provide floor designations on each entrance side of each entrance frame visible from within the car and the elevator lobby to replace any that are missing with the same type. The centerline of the letter or numeral designation of these indicators shall be 60" to center line above finished floor. Designations shall be raised 0.03" on a contrasting color background and not less than 2" in height. At the ground floor lobby provide elevator identification plates mounted in the upper right door frame for each elevator. Provide Model SUB 229 as produced by Stencil Cutting Supply. Remove the applied white car numbers currently in the transom at the ground floor and the applied transom number on car 2 in the transom.

PART 3 EXECUTION

3.1 COMPLIANCE

3.1.1 When the elevator work included in the Contract is fully complete, the Contractor shall notify the Owner in writing ten (10) calendar days prior to the inspection date that the elevator or elevators are ready for a final inspection and acceptance testing. The Contractor shall co-ordinate with the local inspecting authority for inspection dates of the elevator equipment. The Contractor shall secure and pay for all permits and inspection fees required. The Owner, in conjunction with the local inspecting authority, shall inspect the installation. The Contractor shall perform all tests and demonstrate the proper operation of all parts and provisions of the equipment and shall prove to the satisfaction of the Owner and the elevator inspector that the elevator, as installed, complies with the requirements of this Contract and all applicable testing requirements of ASME A17.1. Inspection procedures outlined in ASME A17.1 Section 8.10 shall form a part of the final inspection. Elevator Contractor shall demonstrate that performance as required under the Paragraph "Performance" is provided. The Contractor shall co-ordinate with the local inspecting authority for an inspection of each unit upon completion. The Contractor shall also co-ordinate with the Owner for their inspection. Duplication of areas of testing will not be required.

a. Follow Up Inspection: There shall be one inspection and one follow up re-inspection. The Contractor shall be responsible for the cost incurred by the Owner for the requirement of more than one re-inspection that may be required as a result of not being 100% complete with deficiency list related items. The cost of such inspections shall be inclusive of airfare, hotel accommodations, daily expenses where applicable and the inspecting agents time.

b. Testing Materials and Instruments: Furnish all test instruments and material required for final inspection. Include standard 50 lb test weights, insulation "Megger" 600 volt, alternating current voltmeter and ammeter, direct and AC current voltmeters and ammeters, Celsius calibrated

thermometers, light meter, spirit level, stop watch and a digital and analog tachometers.

c. Data and Test Records not to be submitted: Shop test and certified test sheets for elevator motors are not required. The heating, insulation resistance and other characteristics of the motors shall be determined under actual field measurement conditions after installation.

3.1.2 Final Inspection: In addition to any other tests, make the following tests at the time of final inspection:

a. Speed Load Test: Determine the actual speed of the elevator car, in both directions of travel, with the rated load and with no load in the elevator car. Make speed tests before the rated load test run and also after the rated load test run. Determine speed by applying a tachometer to the car drive sheave. The actual measured speed of elevator car with rated load in the "Up" direction shall be contract speed. The maximum difference in actual measured speeds obtained under the various conditions outlined shall not exceed 3% of the total difference between the "Up" and the "Down" speeds. Check floor-to-floor and cycle time in "Up" and "Down" directions.

b. Car Leveling Test: Test elevator car leveling devices for accuracy of landing at all floors with no load in car, symmetrical load in car and with the rated load in car, in both directions of travel. Determine accuracy of floor landing both before and after the rated full load run test. The leveling accuracy of the car and landing sill shall not exceed 1/4".

c. Brake Test: Conduct brake test with the rated full load in the car. Run car down from the top floor with 125% rated capacity load and stop at any floor including the bottom terminal floor. The car shall stop, doors shall open, and the brake shall set holding the car at that floor without overshooting or re-leveling. Each brake pad shall be capable of holding the car at the floor with 125% overload condition.

d. Insulation Resistance Tests: The complete wiring systems of the elevator shall be free from short circuits and grounds and the insulation resistance shall be determined by use of a "Megger". Conductors shall have an insulation resistance of not less than one megohm between each conductor and ground and between each conductor and all other conductors.

e. Buffer Tests: Test buffers for car and counterweight as outlined in ASME A17.1 Section 8.10.2.2.5 (c).

f. Temperature Rise Tests: The drive motor and related transformers shall be tested to demonstrate that the temperature rise under normal operating conditions encountered in the building will not exceed a 50 degrees C. above ambient when measured with a thermometer or pyrometer or electronic means. Tests shall commence with each type elevator having been turned off for a minimum time period of four (4) hours. This time period is required in order to realize ambient temperature of the equipment to be tested. Tests shall be performed with full and empty capacity load in the car. These full and empty load tests shall be made until constant temperatures are reached on all such pieces of equipment. In making these tests, the car shall stop at each landing in each direction of travel for a time period of not less than 5 nor more than 10 seconds to realize 240 starts per hour. Other test conditions shall be conducted as specified in the latest procedure of the Institute of Electrical and Electronic Engineers (IEEE std 113-2000) for heat runs on A.C Motors and MG 1 -2000 Section 18.436. During the heat test the machine ambient room temperature shall remain under 95 degrees F.

g. Certification: In addition to the tests required by ASME A17.1 the Contractor shall provide

evidence of certification by a public authority of competent jurisdiction for the project area, stating that each governor and car safety has been tested and approved for use with equipment having the specific ratings indicated or specified. Include the following data on a plate attached to each safety:

1. Manufacturer's name.

2. Model and type designation.

3. Maximum tripping speed in feet per minute.

4. Maximum gross load, in lbs, which the safety is designed to stop and sustain as installed.

5. The date of the safety test, made during the elevator inspection and acceptance tests witnessed by a Certified Elevator Inspector, his name and certificate number.

h. Balance Test: Demonstrate with an AC ammeter connected in the three (3) phase input to the drive motor to verify that the cars are balanced precisely at 40.0% for gearless cars 1 - 2. Lifting the mechanical brake at the midpoint in the hoistway with both the car and counterweight crossheads at the same vertical elevation and pulling on the drive sheave in each direction shall also be performed as a secondary verification to confirm car balance percentile.

i. Failure Tests:

j. Normal Terminal Stopping Device: Demonstrate that the Normal Terminal Stopping Device functions properly with both the Normal Stopping Device and the Normal Tracking Device disabled. This test shall be performed with a full load in the car in the down direction and an empty car in the up direction. The device shall so function that the car shall slow down and stop at the terminal floors so that passengers can exit the car. High speed stops and passenger entrapments outside the leveling zone shall not be accepted.

k. Emergency In Car Stop Switch: Upon activation of the in car emergency stop switch, power shall be removed immediately from the driving machine motor and brake. Systems where controlled emergency stops are realized shall be rejected.

3.1.3 Payment Schedule: The below listing represents the payment schedule which will be applicable to this project:

Payment Percentage	Area
10%	Engineering cost with contract award.
45%	Material delivered to job or stored off site.
35%	With monthly labor payment certification.
10%	Total completion retention (Maximum)

3.1.4 After total completion each elevator including all final adjustments, testing, and deficiency list corrections

a complete elevator equipment cleaning shall be performed prior to the owner's acceptance. These activities shall include the following:

1. Vacuum all dirt and dust from the drive and control cabinets.
2. Vacuum all dirt and dust from isolation transformer cabinet.
3. Vacuum dirt and dust from the drive motors and the machines.
4. Vacuum the machine room floor and then
5. Vacuum the dirt and dust from every hoistway header and landing sill.
6. Vacuum all hoistway ledges including divider beams.
7. Vacuum the entire pit area including pit elevator equipment and paint the floor.
8. Vacuum all car top equipment and also the interior of each car station.
9. Vacuum all dirt and debris from car safeties.

3.2 TOOLS

3.2.1 Three (3) sets of tools shall be furnished in an appropriate metal tool box and delivered to the Owner. The set shall consist of all special tools required for making adjustments on those parts of the elevator installation requiring the use of special tools or wrenches. Provide the full diagnostic tool required to fully adjust both the signal and speed control of the system. A high-pressure grease gun of ample size to suit grease gun connections shall be provided with each set of tools. Any special or over size tools required to adjust brakes and other equipment shall also be supplied.

END OF SECTION

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

GENERAL

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and supervision to construct complete and operable electrical systems as indicated on the drawings and specified herein.

B. All materials and equipment used shall be new, undamaged and free from any defects.

1.2 ELECTRICAL DRAWINGS

A. Electrical contract drawings are diagrammatic and indicate the general arrangement of electrical equipment. Do not scale electrical plans.

B. Coordinate installation of electrical equipment with the mechanical equipment and access thereto.

C. Discrepancies shown on different drawings, between drawings and specifications or between documents and field conditions shall be installed to provide the better quality or greater quantity of work; or, comply with the more stringent requirement; either or both in accordance with the A/E's interpretation.

1.3 EXISTING SERVICES AND FACILITIES

A. Damage to Existing Services: Existing services and facilities damaged by the Contractor through negligence or through use of faulty materials or workmanship shall be promptly repaired, replaced, or otherwise restored to previous conditions by the Contractor without additional cost to the Owner.

B. Interruption of Services: Interruptions of services necessary for connection to or modification of existing systems or facilities shall occur only at prearranged times approved by the Owner. Interruptions shall only occur after the provision of all temporary work and the availability of adequate labor and materials will assure that the duration of the interruption will not exceed the time agreed upon.

C. Removed Materials: Existing materials made unnecessary by the new installation shall be stored on site. They shall remain the property of the Owner and shall be stored at a location and in a manner as directed by the Owner. If classified by the Owner's authorized representative as unsuitable for further use, the material shall become the property of the Contractor and shall be removed from the site at no additional cost to the owner.

PART 2 - PRODUCTS

2.1 FIRESTOPPING:

A. A firestop system shall be used to seal penetrations of electrical conduits and cables through fire-rated partitions per NEC 300.21, and NEC 800.26. The firestop system shall be qualified by formal performance testing in accordance with ASTM E-814, or UL 1479.

B. The firestop system shall consist of a fire-rated caulk type substance and a high temperature fiber insulation. It shall be permanently flexible, waterproof, non-toxic, smoke and gas tight and have a high adhesion to all solids so damming is not required. Only metal conduit shall be used in conjunction with this system to penetrate fire rated partitions. Install in strict compliance with manufacturer's recommendations. 3M or approved equal.

C. Comply with TIA/EIA-569-A, Annex A, "Firestopping."

D. Comply with BICSI TDMM, "Firestopping Systems" Article.

PART 3 - EXECUTION

3.1 PRODUCT INSTALLATION, GENERAL

A. Except where more stringent requirements are indicated, comply with the product manufacturer's installation instructions and recommendations, including handling, anchorage, assembly, connections, cleaning and testing, charging, lubrication, startup, test operation and shut-down of operating equipment. Consult with manufacturer's technical experts, for specific instructions on unique product conditions and unforeseen problems.

B. Protection and Identification: Deliver products to project properly identified with names, models numbers, types, grades, compliance labels and similar information needed for distinct identifications; adequately packaged or protected to prevent deterioration during shipment, storage and handling. Store in a dry, well ventilated, indoor space, except where prepared and protected by the manufacturer specifically for exterior storage.

C. Clean all equipment, inside and out, upon completion of the work. Scratched or marred surfaces shall be touched-up with touch-up paint furnished by the equipment manufacturer.

D. Replace all equipment and materials that become damaged.

3.2 ELECTRICAL WORK:

A. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished in this manner for the required work, the following requirements are mandatory:

1. Electricians must use full protective equipment (i.e., certified and tested insulating

material to cover exposed energized electrical components, certified and tested insulated tools, etc.) while working on energized systems in accordance with NFPA 70E.

2. Electricians must wear personal protective equipment while working on energized systems in accordance with NFPA 70E.

3. Before initiating any work, a job specific work plan must be developed by the contractor with a peer review conducted and documented by the Contractor. The work plan must include procedures to be used on and near the live electrical equipment, barriers to be installed, safety equipment to be used and exit pathways.

4. Work on energized circuits or equipment cannot begin until prior written approval is obtained from the Owner/ Architect.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements for the following:
1. Wire and cable for 600 volts and less.
2. Wiring connectors and connections.

PART 2 - PRODUCTS

2.1 WIRING REQUIREMENTS

A. Exposed Dry Interior Locations: Use only THHN, THHW, or XHHW in raceway.

B. Metal Clad (MC) cable shall not be used unless prior approval has been granted by the architect and engineer.

2.2 BUILDING WIRE

A. Conductor: Copper.

B. Insulation Voltage Rating: 600 volts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps,

10 AWG and smaller.

B. Motor connections shall be made with compression connectors forming a bolted in-line or stub-type connection.

C. All splices made underground or in the pipe basement shall be rated suitable for water immersion.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Grounding and bonding components.

B. Provide all components necessary to complete the grounding system(s).

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Bonding Jumper Braid: Copper braided tape, sized for application.

B. Electrical Grounding conductors: Unless otherwise indicated, provide bare or green insulated stranded copper electrical grounding conductors sized according to NEC or as shown or specified. Provide green insulated for conductors sized No. 10 AWG and smaller.

PART 3 - EXECUTION

3.3 SECONDARY EQUIPMENT AND CIRCUITS

A. Branch Circuits: Install equipment grounding conductors with all feeders and power branch circuits, sized in accordance with Article 250 of NFPA 70.

B. Metallic Conduit: Metallic conduits which terminate without mechanical connection to an electrical equipment housing by means of locknut and bushings or adapters, shall be provided with grounding bushings. Connect bushings with a bare grounding conductor to the equipment ground bus.

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS.

2.1 MATERIALS

A. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.

B. Supports: Fabricated of structural steel or formed steel members; galvanized, *or PVC*

C. Anchors and Fasteners:
1. Do not use powder-actuated anchors.
2. Concrete Structural Elements: Use precast inserts, expansion anchors, or preset inserts.
3. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
4. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
5. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
6. Solid Masonry Walls: Use expansion anchors or preset inserts.
7. Sheet Metal: Use sheet metal screws.
8. Wood Elements: Use wood screws.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

B. In wet and damp locations use steel channel supports to stand cabinets, disconnects and panelboards 1 inch (25 mm) off wall.

C. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 CONDUIT REQUIREMENTS

A. Conduit Size: Comply with NFPA 70.
1. Minimum Size: 3/4 inch

B. Wet and Damp Locations:
1. Interior: RMC, IMC, or LTFMC

2.2 METAL CONDUIT

A. Rigid Steel Galvanized Conduit (RMC): ANSI C80.1.

B. Intermediate Metal Conduit (IMC): ANSI C80.6.

C. Nonmetallic Conduit (Schedule 40 PVC): ANSI

D. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.
1. Standard threaded couplings, locknuts, bushings, and elbows: Only steel or malleable iron materials are acceptable. Integral retractable type IMC couplings are also acceptable.
2. Die-cast or pressure-cast zinc-alloy fittings or fittings made of "pot metal" are prohibited.
3. Bushings: Metallic insulating type, consisting of an insulating insert molded or locked into the metallic body of the fitting. Bushings made entirely of metal or nonmetallic material are not permitted.
4. Sealing fittings: Threaded cast iron type. Use continuous drain type sealing fittings to prevent passage of water vapor. In concealed work, install fittings in flush steel boxes with blank cover plates having the same finishes as that of other electrical plates in the room.
5. Provide long sweep RGS elbows for underground runs transitioning to above grade.

2.3 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LTFMC) Description: Interlocked steel construction with PVC jacket. Liquid-tight flexible metal conduit: Shall Conform to UL 360.

B. Fittings: UL 514B and ANSI/ NEMA FB1.
1. Only steel or malleable iron materials are acceptable.
2. Die-cast or pressure-cast zinc-alloy fittings or fittings made of "pot metal" are prohibited.
3. Fittings must incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening. Connectors shall have insulated throats.
4. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch, with overlapping sleeves protecting threaded joints.

PART 3 - EXECUTION

3.1 CONDUIT INSTALLATION

A. Waterproofing: At floor, exterior wall, and roof conduit penetrations, completely seal clearances around the conduit and make watertight.

B. For power conduits install no more than equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one shot bender to fabricate bends in metal conduit larger than 2 inch (50 mm) size.

C. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS

2.1 NAMEPLATES AND LABELS

A. Nameplates: Engraved three-layer laminated plastic, black letters on white background unless noted otherwise.

B. Locations:
1. Each electrical distribution and control equipment enclosure.

C. Letter Size:
1. Use 1/4 inch (6 mm) letters for identifying grouped equipment and loads.

D. Labels: Embossed adhesive tape, with 3/16 inch (5 mm) white letters on black background. Use only for identification of individual wall switches, receptacles, and control device stations. Labels shall identify the panel and circuit number (Ex: PANEL: CIRCUIT).

PART 3 - PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

3.2 INSTALLATION

A. Install nameplates and labels parallel to equipment lines.

B. Secure nameplates to equipment front using corrosion resistant screws.

C. Provide name plates on all disconnect switches.

D. Provide updated, typed panel directories where new circuits originate.

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 NOT USED.

PART 2 - PRODUCTS

2.1 MANUFACTURERS: Subject to compliance with requirements, provide products by, but not limited to, one of the following:

A. Eaton Electrical/Cutler-Hammer
B. GE Industrial
C. Square D

2.2 FUSIBLE SWITCH

A. Fusible Switch Assemblies: NEMA KS 1, Type HD enclosed load interrupter knife switch.
1. Externally operable handle interlocked to prevent opening front cover with switch in ON position.
2. Handle lockable in OFF position.
3. Fuse clips: Designed to accommodate NEMA FU1, Class R or J fuse

2.3 ENCLOSURES

A. Enclosures: NEMA KS 1.
1. Interior Dry Locations: Type 1.

PART 3 - EXECUTION

3.1 LABELING

A. Provide nameplates (White with Black letters) on all switch enclosures wherein new circuits are modified or installed. Indicate the following information:
1. Equipment Switch Serves.
2. Branch Circuit.
3. Voltage, phase, wire, short circuit current rating
4. Date installed

END OF SECTION 260500