



USC Aiken Etherredge Roof Repairs

Aiken, South Carolina

Abbreviated Scope of Work

Prepared For

University of South Carolina
1300 Pickens Street
Columbia, SC 29208

Owner Project Number: H29-9550

ADC Project Number: 19065

June 5, 2019

USC Aiken Etherredge Roof Repairs

Aiken, South Carolina

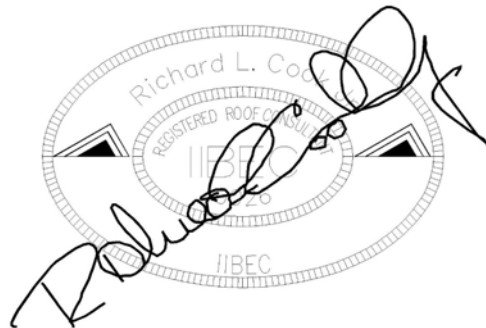
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Mr. Richard L. Cook, Jr., FRCI, RRC, RWC, REWC, RBEC, RRO, CCS, CSRP, & LEED® AP
ADC Engineering, Inc.

June 5, 2019

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PROJECT NUMBER: H29-9550

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SE-310 INVITATION FOR DESIGN-BID-BUILD CONSTRUCTION SERVICES

AGENCY/OWNER: University of South Carolina

PROJECT NAME: USCA Etherredge Center Roof Repairs

PROJECT NUMBER: H29-9550 CONSTRUCTION COST RANGE: \$ 95,000 to \$ 110,000 N/A

PROJECT LOCATION: Aiken, SC

DESCRIPTION OF PROJECT/SERVICES: Base Bid work total removal of existing roofing system on Area H down to the structural deck for aprox 22 squares. Roof replacement includes minor deck repairs, rough carpentry, roof insulation, including taper, and a two-ply modified bitumen roof system. All associated sheet metal components and accessories are included. ALT 1 and ALT 2 include roof repairs to the existing ballasted EPDM roof membrane. ALT 3 includes drain repairs. Small and minority participation is strongly encouraged.

BID/SUBMITTAL DUE DATE: 8/13/2019 TIME: 2:30pm NUMBER OF COPIES: 1

PROJECT DELIVERY METHOD: Design-Bid-Build

AGENCY PROJECT COORDINATOR: Hatice Hikmet

EMAIL: hikmeth@mailbox.sc.edu TELEPHONE: 803-777-9994

DOCUMENTS MAY BE OBTAINED FROM: http://purchasing.sc.edu

BID SECURITY IS REQUIRED IN AN AMOUNT NOT LESS THAN 5% OF THE BASE BID.

PERFORMANCE BOND REQUIRED? Yes No PAYMENT BOND REQUIRED? Yes No

DOCUMENT 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. Bidders that rely on copies obtained from any other source do so at their own risk. All written communications with official plan holders & bidders will be via email or website posting.

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

A/E NAME: ADC Engineering, Inc.

A/E CONTACT: Rick Cook

EMAIL: amandam@adcengineering.com TELEPHONE: 843-566-0161

PRE-BID CONFERENCE: Yes No MANDATORY ATTENDANCE: Yes No

PRE-BID DATE: 7/30/2019 TIME: 10:00am

PRE-BID PLACE: USC Maintenance Bldg. 432 Scholar Loop Aiken, SC

BID OPENING PLACE: 1300 Pickens Street Columbia SC Room 100C

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Hatice Hikmet (Bid Enclosed H29-9550)

1300 Pickens St.

Columbia, SC 29208

MAIL SERVICE:

Attn: Hatice Hikmet (Bid Enclosed H29-9550)

1300 Pickens St.

Columbia, SC 29208

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

APPROVED BY: _____ DATE: _____

(OSE Project Manager)

**South Carolina Division of Procurement
Services, Office of the State Engineer Version of
 AIA® Document A701™ – 1997**

Instructions to Bidders

This version of AIA Document A701™–1997 is modified by the South Carolina Division of Procurement Services, Office of the State Engineer (“SCOSE”). Publication of this version of AIA Document A701–1997 does not imply the American Institute of Architects’ endorsement of any modification by SCOSE. A comparative version of AIA Document A701–1997 showing additions and deletions by SCOSE is available for review on the SCOSE Web site.

Cite this document as “AIA Document A701™– 1997, Instructions to Bidders — SCOSE Version,” or “AIA Document A701™–1997 — SCOSE Version.”

South Carolina Division of Procurement Services, Office of the State Engineer Version of AIA Document A701™ – 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address)

USC Aiken Etherredge Roof Repairs
Aiken, SC
H29-9550

THE OWNER:

(Name, legal status and address)

University of South Carolina
1300 Pickens Street
Columbia, SC 29208

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

THE ARCHITECT:

(Name, legal status and address)

ADC Engineering, Inc.
1226 Yeamans Hall Road
Hanahan

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

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents, 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, Supplementary Instructions to Bidders, the Bid Form, the Notice of Intent to Award, 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, 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 AIA Document A101™-2007 Standard Form of Agreement Between Owner and Contractor, SCOSE edition. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean AIA Document A201™-2007 General Conditions of the Contract for Construction, SCOSE edition.

§ 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.

§ 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 submitting a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents and 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. 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.

§ 2.1.2 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 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.

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

§ 2.1.5 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.

§ 2.1.5.1 By submitting a bid, the bidder certifies that:

- .1 The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to:
 - .1 those prices;
 - .2 the intention to submit a bid; or
 - .3 the methods or factors used to calculate the prices offered.
- .2 The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
- .3 No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

§ 2.1.5.2 Each signature on the bid is considered to be a certification by the signatory that the signatory:

- .1 Is the person in the bidder's organization responsible for determining the prices being offered in this bid, and that the signatory has not participated and will not participate in any action contrary to Section 2.1.5.1 of this certification; or
- .2 Has been authorized, in writing, to act as agent for the bidder's principals in certifying that those principals have not participated, and will not participate in any action contrary to Section 2.1.5.1 of this certification [As used in this subdivision, the term "principals" means the person(s) in the bidder's organization responsible for determining the prices offered in this bid];
- .3 As an authorized agent, does certify that the principals referenced in Section 2.1.5.2.2 of this certification have not participated, and will not participate, in any action contrary to Section 2.1.5.1 of this certification; and
- .4 As an agent, has not personally participated, and will not participate, in any action contrary to Section 2.1.5.1 of this certification.

§ 2.1.5.3 If the bidder deletes or modifies Section 2.1.5.1.2 of this certification, the bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

§ 2.1.6 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.

§ 2.1.7 CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS

§ 2.1.7.1 By submitting a Bid, Bidder certifies, to the best of its knowledge and belief, that:

- .1 Bidder and/or any of its Principals-
 - .1 Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;
 - .2 Have not, within a three-year period preceding this bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of bids; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and
 - .3 Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in Section 2.1.7.1.1.2 of this provision.
- .2 Bidder has not, within a three-year period preceding this bid, had one or more contracts terminated for default by any public (Federal, state, or local) entity.

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- 3 "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

§ 2.1.7.2 Bidder shall provide immediate written notice to the Procurement Officer if, at any time prior to contract award, Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

§ 2.1.7.3 If Bidder is unable to certify the representations stated in Section 2.1.7.1, 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.

§ 2.1.7.4 Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by Section 2.1.7.1 of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

§ 2.1.7.5 The certification in Section 2.1.7.1 of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

§ 2.1.8 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 the contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, the contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed.

§ 2.1.9 RESTRICTIONS APPLICABLE TO BIDDERS & GIFTS

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

§ 2.1.9.1 After issuance of the solicitation, *bidder agrees not to discuss this procurement activity in any way with the Owner or its employees, agents or officials.* All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed.

§ 2.1.9.2 Unless otherwise approved in writing by the Procurement Officer, *bidder agrees not to give anything to the Owner, any affiliated organizations, or the employees, agents or officials of either, prior to award.*

§ 2.1.9.3 Bidder acknowledges that the policy of the State is that a governmental body should not accept or solicit a gift, directly or indirectly, from a donor if the governmental body has reason to believe the donor has or is seeking to obtain contractual or other business or financial relationships with the governmental body. Regulation 19-445.2165(C) broadly defines the term donor.

§ 2.1.10 OPEN TRADE REPRESENTATION (JUN 2015)

By submitting an Offer, the Offeror represents that Offeror is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [02-2A083-1]

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 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 (10) 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 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.

§ 3.1.3 The Owner has made 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.

§ 3.1.4 All persons obtaining Bidding Documents from the issuing office designated in the Advertisement shall provide that office with Bidder's contact information to include the Bidder's name, telephone number, mailing address, and email address.

§ 3.2 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 requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least ten (10) days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by written 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. 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.

§ 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. 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.

§ 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 (10) 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.

§ 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 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.

§ 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.

§ 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, the 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.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the SE-330 Bid Form included with the Bidding Documents.

§ 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.

§ 4.1.3 Sums shall be expressed in figures.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid. Bidder shall not make stipulations or qualify his bid in any manner not permitted on the bid form. An incomplete Bid or information not requested that is written on or attached to the Bid Form that could be considered a qualification of the Bid, may be cause for rejection of the Bid.

§ 4.1.5 All requested Alternates shall be bid. The failure of the bidder to indicate a price for an Alternate shall render the Bid non-responsive. Indicate the change to the Base Bid by entering the dollar amount and marking, as appropriate, the box for "ADD TO" or "DEDUCT FROM". If no change in the Base Bid is required, enter "ZERO" or "No Change."

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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.

§ 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.

§ 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.

§ 4.2 BID SECURITY

§ 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.

§ 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.

§ 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.

§ 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.

§ 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, 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.

§ 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.

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

§ 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.

§ 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 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.

§ 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

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

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

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

§ 5.1.4 If the Owner determines to award the Project, the 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, the Owner will open and consider the Bid.

§ 5.2 REJECTION OF BIDS

§ 5.2.1 The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.2.2 The reasons for which the Owner will reject Bids include, but are not limited to:

- .1 Failure by a Bidder to be represented at a Mandatory Pre-Bid Conference or site visit;
- .2 Failure to deliver the Bid on time;
- .3 Failure to comply with Bid Security requirements, except as expressly allowed by law;
- .4 Listing an invalid electronic Bid Bond authorization number on the bid form;
- .5 Failure to Bid an Alternate, except as expressly allowed by law;
- .6 Failure to list qualified Subcontractors as required by law;
- .7 Showing any material modification(s) or exception(s) qualifying the Bid;
- .8 Faxing a Bid directly to the Owner or 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.

§ 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 RESPONSIBILITY

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

§ 6.2 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 E (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].

§ 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.

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 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.

§ 7.2 TIME OF DELIVERY CONTRACT, CERTIFICATES OF INSURANCE AND FORM OF BONDS

§ 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 (7) days thereafter. The Bidder shall deliver the required bonds and certificate of insurance to the Owner not later than three (3) days following the date of execution of the Contract. Failure to deliver these documents as required shall entitle the Owner to consider the Bidder's failure as a refusal to enter into a contract in accordance with the terms and conditions of the Bidder's Bid and to make claim on the Bid Security for re-procurement cost.

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

§ 7.2.3 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 A101-2007, Standard Form of Agreement Between Owner and Contractor, SCOSE edition.

ARTICLE 9 MISCELLANEOUS

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

§ 9.1.1 Withholding Requirements for Payments to Nonresidents: 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.

§ 9.1.2 For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department's website at: www.sctax.org

§ 9.1.3 This notice is for informational purposes only. This Owner does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898- 5383.

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

§ 9.2 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

§ 9.3.1 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that the Bidder contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged & confidential, as that phrase is used in Section 11-35-410.

§ 9.3.2 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the words "TRADE SECRET" every page, or portion thereof, that the Bidder contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act.

§ 9.3.3 For every document the Bidder submits in response to or with regard to this solicitation or request, the Bidder must separately mark with the word "PROTECTED" every page, or portion thereof, that the Bidder contends is protected by Section 11-35-1810.

§ 9.3.4 All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire bid as confidential, trade secret, or protected! If your bid, or any part thereof, is improperly marked as confidential or trade secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page.

§ 9.3.5 By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract

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(including, but not limited to, documents contained in a response, documents submitted to clarify a response, & documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, & (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure.

§ 9.3.6 In determining whether to release documents, the State will detrimentally rely on the Bidders' marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED".

§ 9.3.7 By submitting a response, the Bidder agrees to defend, indemnify & hold harmless the State of South Carolina, its officers & employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Bidder marked as "confidential" or "trade secret" or "PROTECTED".

§ 9.4 POSTING OF INTENT TO AWARD

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

Room or Area of Posting: Lobby

Building Where Posted: University of South Carolina

Address of Building: 1300 Pickens Street

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

§ 9.5.1 Any prospective bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen (15) 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 (10) 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.

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

- .1 by email to protest-ose@mmo.sc.gov,
- .2 by facsimile at 803-737-0639, or
- .3 by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201.

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

§ 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

§ 9.8.1 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.

§ 9.8.2 Taxpayers must maintain evidence of work performed for a State contract by the minority subcontractor. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888.

§ 9.8.3 The subcontractor must be certified as to the criteria of a "Minority Firm" by the Governor's Office of Small and Minority Business Assistance (OSMBA). Certificates are issued to subcontractors upon successful completion of the certification process. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. Reference: 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

N/A

 **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
1300 Pickens Street
Columbia, SC 29208

BOND AMOUNT: \$**PROJECT:***(Name, location or address, and Project number, if any)*

USCA Etherredge Center Roof Repairs
Owner Project Number: H29-9550

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

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User Notes:

(1094077272)

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 ,

(Principal) *(Seal)*

(Witness)

(Title)

(Surety) *(Seal)*

(Witness)

(Title)

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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 Aiken Etherredge Roof Repairs

PROJECT NUMBER: H29-9550

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

- Bid Bond with Power of Attorney**

 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):* Base Bid work includes total removal of existing roofing system on Roof Area H down to the structural deck for approximately 22 squares of roof. Roof replacement includes minor deck repairs, rough carpentry, roof insulation, including taper, and a two-ply modified bitumen roof system. All associated sheet metal components and accessories are included.

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

(Bidder to 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): Alternate Number 1 work includes selective roof repairs to the existing ballasted EPDM roof membrane at locations noted on the drawings.

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): Alternate Number 2 work includes selective roof repairs to the existing ballasted EPDM roof membrane at locations noted on the drawings.

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): Alternate Number 3 work includes drain repairs at all locations as noted on drawings.

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**.

<u>No.</u>	<u>ITEM</u>	<u>UNIT OF MEASURE</u>	<u>ADD</u>	<u>DEDUCT</u>
<u>1.</u>	<u>Metal Deck Repair</u>	<u>SF</u>	<u>\$</u>	<u>\$</u>
<u>2.</u>	<u>Metal Deck Replacement</u>	<u>SF</u>	<u>\$</u>	<u>\$</u>
<u>3.</u>	<u>2 x 4</u>	<u>LF</u>	<u>\$</u>	<u>\$</u>
<u>4.</u>	<u>2 x 6</u>	<u>LF</u>	<u>\$</u>	<u>\$</u>
<u>5.</u>	<u>Roof Drain (less than 5")</u>	<u>EA</u>	<u>\$</u>	<u>\$</u>
<u>6.</u>	<u>Roof Drain (greater than 5")</u>	<u>EA</u>	<u>\$</u>	<u>\$</u>

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:

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

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

SE-330
LUMP SUM BID FORM

**INSTRUCTIONS FOR
SUBCONTRACTOR LISTING**

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

SE-330 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 § 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 30 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 \$ 200.00 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 SCOSE Version of the AIA A701, Instructions to Bidders, is expressly incorporated by reference.

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

TELEPHONE: _____

EMAIL: _____

SIGNATURE: _____ **DATE:** _____

PRINT NAME: _____

TITLE: _____

**South Carolina Division of Procurement Services,
Office of the State Engineer Version of
AIA Document A101 – 2007**

The Form of the Contract shall be the SCOSE Version of the AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, which is incorporated herein by reference. Samples of these documents may be viewed in Appendix J.2 of the OSE Manual, found at <https://procurement.sc.gov/manual>.

**South Carolina Division of Procurement
Services, Office of the State Engineer Version of
 AIA Document A201™ – 2007**

General Conditions of the Contract for Construction

This version of AIA Document A201™–2007 is modified by the South Carolina Division of Procurement Services, Office of the State Engineer (“SCOSE”). Publication of this version of AIA Document A201–2007 does not imply the American Institute of Architects’ endorsement of any modification by SCOSE. A comparative version of AIA Document A201–2007 showing additions and deletions by SCOSE is available for review on the SCOSE Web site.

Cite this document as “AIA Document A201™–2007, General Conditions of the Contract for Construction—SCOSE Version,” or “AIA Document A201™–2007 — SCOSE Version.”

South Carolina Division of Procurement Services, Office of the State Engineer Version of AIA Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

USC Aiken Etherredge Roof Repairs
Aiken, SC

THE OWNER:

(Name, legal status and address)

University of South Carolina
1300 Pickens Street
Columbia, SC 29208

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

THE ARCHITECT:

(Name, legal status and address)

ADC Engineering, Inc.
1226 Yeamans Hall Road
Hanahan, SC 29410

This version of AIA Document A201–2007 is modified by the South Carolina Division of Procurement, Office of the State Engineer. Publication of this version of AIA Document A201 does not imply the American Institute of Architects' endorsement of any modification by South Carolina Division of Procurement, Office of the State Engineer. A comparative version of AIA Document A201–2007 showing additions and deletions by the South Carolina Division of Procurement, Office of the State Engineer is available for review on the State of South Carolina Web site.

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

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

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

Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean AIA Document A101™–2007 Standard Form of Agreement Between Owner and Contractor, SCOSE edition. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean AIA Document A201™–2007 General Conditions of the Contract for Construction, SCOSE edition.

§ 1.1.2 THE CONTRACT

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

§ 1.1.3 THE WORK

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

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

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

§ 1.1.8 NOTICE TO PROCEED

The 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.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. In the event of patent ambiguities within or between parts of the Contract Documents, the Contractor shall 1) provide the better quality or greater quantity of Work, or 2) comply with the more stringent requirement, either or both in accordance with the Architect's interpretation.

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

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

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

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

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service and 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.

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

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

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

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, except as 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 § 8.3 of the Agreement.]

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen (15) days after receipt of a written request, information necessary and relevant for the Contractor to post Notice of Project Commencement pursuant to Title 29, Chapter 5, Section 23 of the South Carolina Code of Laws, as amended.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

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

§ 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.

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

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one electronic copy (.pdf format) of the Contract Documents. The Contractor may make reproductions of the Contract Documents pursuant to Section 1.5.2.

§ 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.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

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

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect, 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.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

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

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed by the Owner in writing to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

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

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

§ 3.4 LABOR AND MATERIALS

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

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

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

§ 3.5 WARRANTY

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

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. The Contractor shall comply with the requirements of Title 12, Chapter 8 of the South Carolina Code of Laws, as amended, regarding withholding tax for nonresidents, employees, contractors and subcontractors.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

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

negotiations concluded. 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.

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

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

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

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

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 SUPERINTENDENT

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

§ 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 whether the Owner has reasonable objection to the proposed superintendent. Failure of the Owner to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall notify the Owner, in writing, of any proposed change in the superintendent, including the reason therefore, prior to making such change. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

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

§ 3.10.3 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 Contractor 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.

§ 3.10.4 The Owner's review and acceptance of the 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.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

§ 3.12.5.1 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 for review and approval. A copy of the shop drawings will also be sent to OSE for information. 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 for approval.

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

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

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

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

§ 3.13.2 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.

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

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

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

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

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents. Any reference in the Contract Documents to the Architect taking action or rendering a decision with a "reasonable time" is understood to mean no more than fourteen days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.

§ 4.2.2 The Architect will visit the site as necessary to fulfill its obligation to the Owner for inspection services, if any, and, at a minimum, to assure conformance with the Architect's design as shown in the Contract Documents and to observe the progress and quality of the 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. However, the Architect will not be required to make exhaustive or

continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner informed about the progress and quality of the portion of the Work completed, and 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. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 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. The Architect's response to such requests will be made in writing with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, and will not show partiality to either. Except in the case of interpretations resulting in omissions, defects, or errors in the Instruments of Service or perpetuating omissions, defects, or errors in the Instruments of Service, the Architect will not be liable for results of interpretations or decisions rendered in good faith. If either party disputes the Architect's interpretation or decision, that party may proceed as provided in Article 15. The Architect's interpretations and decisions may be, but need not be, accorded any deference in any review conducted pursuant to law or the Contract Documents.

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

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents so as to avoid delay to the construction of the Project. The Architect's response to such requests will be made in writing with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. Any response to a request for information must be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. Unless issued pursuant to a Modification, supplemental Drawings or Specifications will not involve an adjustment to the Contract Sum or Contract Time.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents 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 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.

§ 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.

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

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner makes reasonable objection to such substitution. The Contractor's request for substitution must be made to the Owner in writing accompanied by supporting information.

§ 5.2.5 A Subcontractor identified in the Contractor's Bid 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 in Section 5.2.3.

§ 5.3 SUBCONTRACTUAL RELATIONS

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, 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 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.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

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

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

§ 5.4.4 Each subcontract shall specifically provide that the Owner shall only be responsible to the subcontractor for those obligations of the Contractor that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.

§ 5.4.5 Each subcontract shall specifically provide that the Subcontractor agrees to perform portions of the Work assigned to the Owner in accordance with the Contract Documents.

§ 5.4.6 Nothing in this Section 5.4 shall act to reduce or discharge the Contractor's payment bond surety's obligations to claimants for claims arising prior to the Owner's exercise of any rights under this conditional assignment.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

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

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

§ 6.1.4 Reserved.

§ 6.2 MUTUAL RESPONSIBILITY

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable

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for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

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

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect (using 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.

§ 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.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

§ 7.3.3 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.

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the 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;

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- 2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- 3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- 4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work.

§ 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.

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

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

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

§ 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.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

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

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

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

§ 8.2 PROGRESS AND COMPLETION

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

§ 8.2.2 The Contractor shall not knowingly commence 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.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner 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.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents. All changes to the Contract Sum shall be adjusted in accordance with Section 7.3.3.

§ 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.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 Monthly, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. 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.

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

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

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing provided such materials or equipment will be subsequently incorporated in the Work. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. The Contractor shall 1) protect such materials from diversion, vandalism, theft, destruction, and damage, 2) mark such materials specifically for use on the Project, and 3) segregate such materials from other materials at the storage facility. The Architect and the Owner shall have the right to make inspections of the storage areas at any time.

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

§ 9.4 CERTIFICATES FOR PAYMENT

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

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

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect shall withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. The Architect shall withhold a Certificate of Payment if the Application for Payment is not accompanied by the current construction schedule required by Section 3.10.1. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

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

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

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

§ 9.6 PROGRESS PAYMENTS

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

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§ 9.6.2 Pursuant to Chapter 6 of Title 29 of the South Carolina Code of Laws, as amended, the Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

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

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

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

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

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

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment to the Owner, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the time established in the Contract Documents the amount certified by the Architect or awarded by final dispute resolution order, then the Contractor may, upon seven additional days' 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.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use and when all required occupancy permits, if any, have been issued and copies have been delivered to the Owner.

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

§ 9.8.3 Upon receipt of the Contractor's list, the Architect, 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 re-inspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.

§ 9.8.3.1 If the Architect and Owner concur in the Contractor's assessment that the Work or a portion of the Work is safe to occupy, the Owner and Contractor may arrange for a Certificate of Occupancy Inspection by OSE. The Owner, Architect, and Contractor shall be present at OSE's inspection. Upon verifying that the Work or a portion of the Work is substantially complete and safe to occupy, OSE will issue, as appropriate, a Full or Partial Certificate of Occupancy.

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

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

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion 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

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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 re-inspections 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.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect 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.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is delayed 60 days through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

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

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

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

§ 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.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

- .1 employees on the Work and other persons who may be affected thereby;

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- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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

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

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

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

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

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

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

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

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 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.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or

who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up. In the absence of agreement, the Architect will make an interim determination regarding any delay or impact on the Contractor's additional costs. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the 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.

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

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

§ 10.3.5 In addition to its obligations under Section 3.18, the Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 Reserved.

§ 10.4 EMERGENCIES

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

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

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;

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- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified 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) Damage to Rented Premises (ea occurrence) \$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.

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

- .1 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;
- .2 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
- .3 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, the 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

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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.

§ 11.1.4 A failure by the Owner to either (i) demand a certificate of insurance or written endorsement required by Section 11.1, or (ii) 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.

§ 11.2 OWNER'S LIABILITY INSURANCE

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

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided 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. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

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

§ 11.3.1.2 Reserved.

§ 11.3.1.3 Reserved.

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

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

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The 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 be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. 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.

§ 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.

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§ 11.3.5 Reserved.

§ 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.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the 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. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the 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. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the 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.

§ 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.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

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

§ 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.

§ 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.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the requirements specifically expressed in the Contract Documents, including inspections of work-in-progress required by all authorities having jurisdiction over the Project, it must, upon demand of the Architect or authority having jurisdiction, be uncovered for observation and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

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

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

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

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract, any dispute, claim, or controversy relating to the Contract, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules.

§ 13.2 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.

§ 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 8.4.2 of the Agreement. Notice to Owner shall be to the address provided in Section 8.3.2 of the Agreement. Either party may designate a different address for notice by giving notice in accordance with this paragraph.

§ 13.4 RIGHTS AND REMEDIES

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

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

§ 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

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

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

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

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

§ 13.6 INTEREST

Payments due 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.

§ 13.7 Reserved

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§ 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 Carolina 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)

§ 13.17 OPEN TRADE (JUN 2015)

During the contract term, including any renewals or extensions, Contractor will not engage in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [07-7A053-1]

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 45 consecutive days through no act or fault of the Contractor 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

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages. Any adjustment to the Contract Sum pursuant to this Section shall be made in accordance with the requirements of Article 7.

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

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials, or otherwise fails to prosecute the Work, or any separable part of the Work, with the diligence, resources and skill that will ensure its completion within the time specified in the Contract Documents, including any authorized adjustments;
- .2 fails to make payment to Subcontractors 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.

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§ 14.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

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

§ 14.2.5 If, after termination for cause, it is determined that the Owner lacked justification to terminate under Section 14.2.1, or that the Contractor's default was excusable, 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.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

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

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Any adjustment to the Contract Sum made pursuant to this section shall be made in accordance with the requirements of Article 7.3.3. No adjustment shall be made to the extent

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

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract in whole or in part for the Owner's convenience and without cause. The Owner shall give written notice of the termination to the Contractor specifying the part of the Contract terminated and when termination becomes effective.

§ 14.4.2 Upon receipt of 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.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, 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.

§ 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 State Fiscal Accountability Authority or the need to divert project funds to respond to an emergency as defined by Regulation 19-445.2110(B) of the South Carolina Code of Regulations, as amended;
- .2 funding for the reinstated portion of the work has been restored;
- .3 circumstances clearly indicate a requirement for the terminated work; and
- .4 reinstatement of the terminated work is advantageous to the Owner.

§ 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.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. A voucher, invoice, payment application or other routine request for payment that is not in dispute when submitted is not a Claim under this definition. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 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.

§ 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.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

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

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. Claims for an increase in the Contract Time shall be based on one additional calendar day for each full calendar day that the Contractor is prevented from working.

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

- .1 Claims for adverse weather shall be based on actual weather conditions at the job site or other place of performance of the Work, as documented in the Contractor's job site log.
- .2 For the purpose of this Contract, a total of five (5) days per calendar month (non-cumulative) shall be anticipated as "adverse weather" at the job site, and such time will not be considered justification for an extension of time. If, in any month, adverse weather develops beyond the five (5) days, the Contractor shall be allowed to claim additional days to compensate for the excess weather delays only to the extent of the impact on the approved construction schedule and days the contractor was already scheduled to work. The remedy for this condition is for an extension of time only and is exclusive of all other rights and remedies available under the Contract Documents or imposed or available by law.
- .3 The Contractor shall submit monthly with their pay application all claims for adverse weather conditions that occurred during the previous month. The Architect shall review each monthly submittal in accordance with Section 15.5 and inform the Contractor and the Owner promptly of its evaluation. Approved days shall be included in the next Change Order issued by the Architect. Adverse weather conditions not claimed within the time limits of this Subparagraph shall be considered to be waived by the Contractor. Claims will not be allowed for adverse weather days that occur after the scheduled (original or adjusted) date of Substantial Completion.

§ 15.1.6 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).

§ 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).

§ 15.2 Reserved.

§ 15.3 Reserved.

§ 15.4 Reserved.

§ 15.5 CLAIM AND DISPUTES - DUTY OF COOPERATION, NOTICE, AND ARCHITECTS INITIAL DECISION

§ 15.5.1 Contractor and Owner are fully committed to working with each other throughout the Project to avoid or minimize claims. To further this goal, Contractor and Owner agree to communicate regularly with each other and the Architect at all times notifying one another as soon as reasonably possible of any issue that if not addressed may cause loss, delay, and/or disruption of the Work. If claims do arise, Contractor and Owner each commit to resolving such claims in an amicable, professional, and expeditious manner to avoid unnecessary losses, delays, and disruptions to the Work.

§ 15.5.2 Claims shall first be referred to the Architect for initial decision. An initial decision shall be required as a condition precedent to resolution pursuant to Section 15.6 of any Claim arising prior to the date of final payment, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered, or after all the Architect's requests for additional supporting data have been answered, whichever is later. The Architect will not address claims between the Contractor and persons or entities other than the Owner.

§ 15.5.3 The Architect will review Claims and within ten days of the receipt of a Claim (1) request additional supporting data from the claimant or a response with supporting data from the other party or (2) render an initial decision in accordance with Section 15.5.5.

§ 15.5.4 If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Architect when the response or supporting data will be furnished or (3) advise the Architect that all supporting data has already been provided. Upon receipt of the response or supporting data, the Architect will render an initial decision in accordance with Section 15.5.5.

§ 15.5.5 The Architect will render an initial decision in writing; (1) stating the reasons therefor; and (2) notifying the parties of any change in the Contract Sum or Contract Time or both. The Architect will deliver the initial decision to the parties within two weeks of receipt of any response or supporting data requested pursuant to Section 16.4 or within such longer period as may be mutually agreeable to the parties. If the parties accept the initial decision, the Architect shall prepare a Change Order with appropriate supporting documentation for the review and approval of the parties and the Office of State Engineer. If either the Contractor, Owner, or both, disagree with the initial decision, the Contractor and Owner shall proceed with dispute resolution in accordance with the provisions of Section 15.6.

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

§ 15.6 DISPUTE RESOLUTION

§ 15.6.1 If a claim is not resolved pursuant to Section 15.5 to the satisfaction of either party, both parties shall attempt to resolve the dispute at the field level through discussions between Contractor's Representative and Owner's Representative. If a dispute cannot be resolved through Contractor's Representative and Owner's Representative, then the Contractor's Senior Representative and the Owner's Senior Representative, upon the request of either party, shall meet as soon as conveniently possible, but in no case later than twenty-one 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.

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: Quality Assurance Inspection shall be made by ADC Engineering, Inc.

§ 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, or enter NONE)*

See Section 01 20 00, Abbreviated Scope of Work.

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

See Section 01 20 00, Abbreviated Scope of Work.

§ 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, or enter NONE)*

See Section 01 20 00, Abbreviated Scope of Work.

§ 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, or enter NONE)*

See Section 01 20 00, Abbreviated Scope of Work.

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

NONE.

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

USC One Year Guarantee, USC Supplemental General Conditions for Construction Projects updated 4/2015
Substantial Completion is the stage in the progress of the project when all of the following conditions are met: all systems are in place in accordance with the Contract Documents and are properly protected, Owner has complete use of the site and the facility without disruption or hindrance and no leaks or damages to the systems exist.

Project Name: USC Aiken Etherredge Roof Repairs

Project Number: H29-9550

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

WE _____
as General Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;

Defects or failures resulting from abuse by Owner.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

[Name of Contracting Firm]

*By _____

Title _____

*Must be executed by an office of the Contracting Firm.

SWORN TO before me this
_____ day of _____, 2____ (seal)

_____ State

My commission expires _____

USC SUPPLEMENTAL GENERAL CONDITIONS FOR CONSTRUCTION PROJECTS

WORK AREAS

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

PROJECT FENCING

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

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

10. Vehicles and all other equipment shall be contained within a fenced area if they are on site for more than 3 consecutive calendar days.

BEHAVIOR

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

HAZARDOUS MATERIALS & SAFETY COMPLIANCE

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

LANDSCAPE & TREE PROTECTION

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

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

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

TEMPORARY FACILITIES

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

CAMPUS KEYS

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

WELDING

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

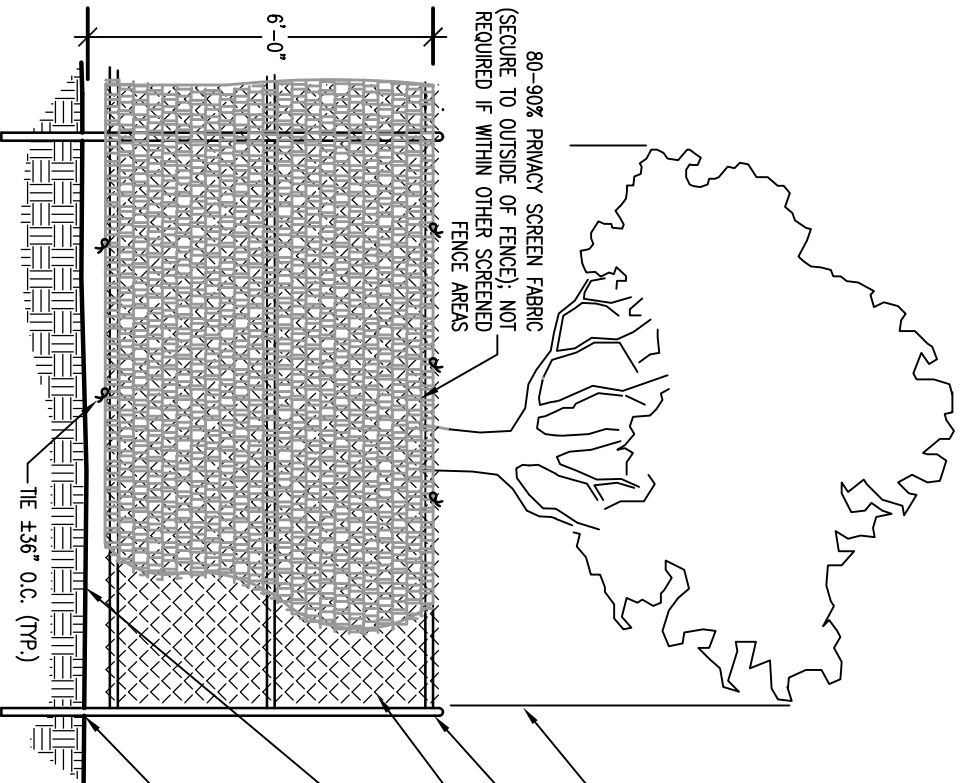
PROJECT EVALUATION & CLOSE-OUT

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

this is completed.

CAMPUS VEHICLE EXPECTATIONS

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



TREE PROTECTION FENCING (IN-GROUND) WITH SCREENING

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 ADDITIONAL 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.

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 – Aiken
 Address: 1300 Pickens 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 Aiken Etherredge Roof Repairs
 State Project Number: H29-9550
 Brief Description of Awarded Work: Etherredge Center Roof Repairs

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

Name: ADC Engineering, Inc.
 Address: 1226 Yeamans Hall Road
Hanahan, SC 29410

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

By: _____
 (Seal)

Print Name: _____

Print Title: _____

Witness: _____

SURETY

By: _____
 (Seal)

Print Name: _____

Print Title: _____
(Attach Power of Attorney)

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 be 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 is 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 – Aiken
Address: 1300 Pickens 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 Aiken Etherredge Roof Repairs
State Project Number: H29-9550
Brief Description of Awarded Work: Etherredge Center Roof Repairs

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

Name: ADC Engineering, Inc.
Address: 1226 Yeamans Hall Road
Hanahan, SC 29410

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 & Material Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

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

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-357**LABOR & MATERIAL PAYMENT BOND****NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to the Agency, this obligation shall be null and void if the Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
 - 2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:
 - 4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.
 - 4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.
 - 4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of one 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 DESIGN-BID-BUILD CONSTRUCTION CONTRACT

AGENCY: University of South Carolina – Aiken

PROJECT NAME: USC Aiken Etherredge Roof Repairs

PROJECT NUMBER: H29-9550

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 of Representative: _____

A/E RECOMMENDATION FOR ACCEPTANCE:

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

Print Name or Representative: _____

AGENCY ACCEPTANCE AND CERTIFICATION:

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

Print Name of Representative: _____

Change is within Agency Construction Contract Change Order Certification of: \$ _____ **Yes** **No**

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

SUBMIT THE FOLLOWING TO OSE

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

SPECIFICATIONS

SECTION 01 20 00

ABBREVIATED SCOPE OF WORK

PART 1 - GENERAL

1.01 SUMMARY

- A. The building will remain completely functional during the construction work and fully protected at all times.
- B. Protect roof system from construction, traffic and work at all times.
- C. Base Bid work includes total removal of existing roofing system on Roof Area H down to the structural deck for approximately 22 squares of roof. Roof replacement includes minor deck repairs, rough carpentry, roof insulation, including taper, and a two-ply modified bitumen roof system. All associated sheet metal components and accessories are included.
- D. If applicable, Alternates may be accepted in any combination by the Owner.
 - 1. Alternate Number 1 work includes selective roof repairs to the existing ballasted EPDM roof membrane at locations noted on the drawings.
 - 2. Alternate Number 2 work includes selective roof repairs to the existing ballasted EPDM roof membrane at locations noted on the drawings.
 - 3. Alternate Number 3 work includes drain repairs at all locations as noted on drawings.
- E. Adhere to all safety and security requirements and procedures of the Owner.

1.02 REFERENCES

- A. All repair work shall be in strict conformance with the Contract Requirements, any clarifications shall be in accordance with the latest edition of the below-listed standards.
 - 1. Roofing
 - a. *The NRCA Roofing and Waterproofing Manual*, Fifth Edition, published by the National Roofing Contractors Association, 2006.
 - b. *Repair Manual for Low-Slope Membrane Roof Systems*, published by the Asphalt Roofing Manufacturers Association, National Roofing Contractors Association (NRCA) and Single Ply Roofing Industry (SPRI), 2014.
 - c. *The NRCA Roofing Manual 2016 Boxed Set*, published by the National Roofing Contractors Association.

2. Sealants

- a. Sealants: The Professional's Guide, Sealant, Waterproofing & Restoration Institute, 2013.

3. Sheet Metal

- a. Architectural Sheet Metal Quality Assurance Guide, Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), 2015.

1.03 REQUIREMENTS INCLUDE

- A. Contract Requirements
- B. Quantities
- C. Allowance
- D. Intent
- E. Contractor Use of Premises
- F. Contractor Responsibilities
- G. Coordination
- H. Submittals
- I. Construction Facilities and Temporary Controls
- J. Charcoal Filters at Air Intakes
- K. General Requirements
- L. Contract Close-Out

1.04 CONTRACT REQUIREMENTS

- A. The time for Substantial Completion is **30** Calendar Days for the Base Bid, an additional **10** Calendar Days for Alternate Number 1, an additional 10 Calendar Days for Alternate Number 2, an additional 10 Calendar Days for Alternate Number 3 and Final Completion is required within **15** Calendar Days of Substantial Completion.
- B. This is a fast-track project. Owner expects work to start immediately and complete the work in the specified time.
- C. The contract shall be a lump sum contract for the Base Bid, Alternate Number 1, Alternate Number 2 and Alternate Number 3.

- D. Specific quantities are included in the contract documents for various items. These quantities are included in the Bid.
- E. Contractor shall provide the required Three-Year Contractor Warranty and any required Manufacturer Warranties listed.

1.05 QUANTITIES

- A. Specific quantities are listed below for this project and are to be included in the Base Bid.

<u>ITEM</u>	<u>QUANTITY</u>	<u>UNIT</u>
Metal Deck Repair	100	SF
Metal Deck Replacement	100	SF
2 x 4	50	LF
2 x 6	50	LF
Roof Drain (less than 5")	1	EA
Roof Drain (5" or greater)	1	EA

1. The contractor shall maintain a daily log of all quantities used based on contract requirements.
2. Contractor shall notify Owner in writing when 80% of contract quantity is used for each item.
3. Owner is not responsible for quantities which exceed 80% unless Owner is notified in writing, prior to exceeding these quantities, and contractor receives written approval to proceed.
4. Provide photographs or videotape documentation of actual quantities used.
5. Locate quantities, and show their locations on plan view drawings.
6. Provide actual used quantities on each Application for Payment request.

1.06 ALLOWANCE

- A. Contractor shall include an allowance of \$1,500 in addition to the current scope of work and unit price quantities.
- B. The allowance will be used to complete services not currently in the scope, only if proposal is determined to be fair and reasonable by Consultant/Engineer and Owner.
- C. If this allowance is not incorporated into the work, a credit will be provided to the Owner for the full amount.

1.07 INTENT

- A. This abbreviated scope of work reflects the general intent of the work as summarized in 1.01 of this section, the technical specifications and as shown on the drawings.
- B. All work shall be in accordance with 2015 IBC/IEBC, OSHA, good construction practices, industry standards and a good standard of care in performing the work.
- C. Prior to submitting bids, potential bidders are required to visit the work site to inspect the work in place, review conditions, and satisfy themselves as to the conditions, nature, character, and extent of work to be accomplished to comply with this Scope of Work.
- D. All dimensions, existing condition indications, item locations, and quantities are provided for general information and shall be field-verified by the contractor prior to bidding work and commencing construction.
- E. Scheduling of work access and any required shutdowns shall be approved by the Owner.

1.08 CONTRACTOR USE OF PREMISES

- A. The University of South Carolina requirements shall take precedents over these documents.
- B. Contractor shall limit use of premises for Work, for storage, and for access, to allow for public access to adjacent buildings and areas.
- C. Contractor may use electricity and water available on premises, but must provide all other needs.
- D. Contractor Layout Space: As indicated by Owner: only areas adjacent to the building may be used. Do not allow traffic or equipment storage outside of the areas indicated. Use of adjoining roofs for access or laydown is not permitted.
- E. Coordinate use of premises under direction and approval of the Owner.
- F. Assume full responsibility for protection and safekeeping of his products under this Contract.
- G. Interior access to facilities shall only occur as directly related to work.

1.09 CONTRACTOR RESPONSIBILITIES

- A. Adhere to all OSHA Safety Requirements.
- B. Adhere to all Owner policies for badging, safety, security and tobacco.
- C. Arrange for delivery; receive and unload products at site.

- D. Inspect deliveries jointly with Manufacturer, or his representative when possible. Record shortages and damaged or defective items.
- E. Handle products at site, including uncrating and storage.
- F. Protect products from damage, and from exposure to elements.
- G. Install products as required to complete contract.
- H. Repair or replace items damaged.
- I. Maintain clean site, with all materials stored in approved laydown area.

1.10 COORDINATION

- A. Seven day (7) notice to Owner and Consultant/Engineer and written approval is required for all items affecting function/use of building.
- B. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- C. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.
- D. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on Drawings. Coordinate routing for pipes and conduit as closely with owner and general contractor; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Coordinate Owner furnished equipment, materials and labor. Provide written notice to Owner, seven (7) days prior to work needed in schedule.
- F. In finished areas, conceal pipes, ducts, and wiring within the construction except as indicated otherwise. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.
- H. Coordinate access to site for correction of defective Work, and Work not in accordance with Contract Documents to minimize disruption of Owner's activities.
- I. Coordinate any manufacturer's site visit/inspection with Owner personnel at least three (3) days prior to the visit. Provide a complete copy of the field report from the manufacturer.
- J. Any shutdowns, interruptions in services, or disconnection of services; requires seven (7) day notification for Owner approval.

1.11 SUBMITTALS

- A. Provide the required submittals as listed in Section 01 20 25, Required Submittals List.
- B. Deliver submittals to Consultant/Engineer, at location designated herein, identifying project name and number.
- C. Furnish all written items in triplicate, as a minimum. Approvals will be distributed to Owner, Consultant/Engineer, and Contractor.
- D. Any variation or deviation from these contract documents or the listed reference standards must be identified and specific approval requested in writing.
- E. Provide necessary shop drawings to clarify deviations to contract drawings, and to provide manufacturers criteria.
- F. Contractor may make notes and clarifications on contract drawings. Any deviations or variations must be clearly identified and approval requested in writing.
- G. Provide samples as required, identifying each, with full information.
- H. Provide schedule of values, project schedule, existing conditions and safety plan prior to the pre-construction conference.
- I. Provide complete SDS sheets for all products.

1.12 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- A. Coordinate use of electricity and water services with Owner.
- B. Provide barriers as required and necessary to prevent public entry. Coordinate all barrier placement with Owner.

1.13 CHARCOAL FILTERS AT AIR INTAKES

- A. When working with solvents, cleaners or adhesives, provide a filter medium with activated charcoal at all air intakes and other roof and wall openings.
 - 1. Place 2 layers of charcoal filter over all air intakes and other roof and wall openings and secure in place.
 - 2. Monitor, remove and replace as need to maintain performance and ensure mechanical systems are unaffected.
- B. “Sniff” Test
 - 1. Prior to beginning of the roof application, contact Owner/Occupants to ensure odors are not entering the building (first day start-up).

- C. Keep all adhesives away from intakes/openings. When using adhesives or when welding work is occurring at intakes/openings, shield with fabricated 'boxes' or 'walls' and use fans/blowers.
- D. When working at intakes or other openings on roof, use large fans/blowers to direct fumes/odors/smoke away from these areas.

1.14 GENERAL REQUIREMENTS

- A. Drawings are provided for Contractor's benefit. Field verification of measurements and conditions are the responsibility of the Contractor.
- B. Material staging area and roof access location to be coordinated with the Owner.
- C. Protection of building interior, occupants, visitors and workmen during construction is of vital importance. Contractor shall take all precautions to ensure a safe work area.
- D. The building occupants and function shall be uninterrupted.
- E. Contractor is to notify Owner immediately of any hazardous materials, unsafe conditions or any varying site conditions.
- F. Clean-up of building exterior and surrounding grounds from damage caused during construction is Contractor responsibility.
- G. Remove all debris from site in strict accordance with all Federal, State and local agency requirements.
- H. Contractor is required to obtain all permits and approvals as well as adhering to all Federal, State and local agency regulations applicable to this project.
 - 1. Any indications of hazardous materials shall be brought to the attention of the Owner immediately.

1.15 CONTRACT CLOSE-OUT

- A. Request for Substantial Completion
 - 1. Contractor to request substantial completion in writing and provide their punchlist.
 - 2. Upon completion of the Substantial Completion punchlist, the Contractor shall return a copy of the punchlist with all items individually initialed indicating the item is complete.
 - 3. Cost for re-inspections required due to the punchlist not being complete will be the Contractor's responsibility.
- B. Provide the required contract close-out documents listed in Section 01 20 60, Contract Close-Out Checklist.

C. Warranties

1. Provide the Three-Year Contractor Warranty on the form included in this project manual dated on or after the awarded Substantial Completion date.
2. Provide required Manufacturer Warranty dated on or after the awarded Substantial Completion date

- D. When Contractor considers work has reached final completion, submit written certification in accordance with Contract Documents to Owner and Consultant/Engineer in preparation for final inspection.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 20 00

SECTION 01 20 05

SAFETY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Noise, vibration, impact, fumes, heat and moisture related to the scope of this work must be coordinated and scheduled as to not affect the operation and function of these facilities.
 - 1. See Section 01 20 00, Abbreviated Scope of Work for fumes/odor requirements.
- B. This facility will remain functional during construction. All necessary safety measures shall be provided to protect occupants, pedestrians and individuals in the surrounding areas potentially affected by this work.
 - 1. This includes access to entrances, thoroughfare locations and adjacent facilities.
- C. This section includes all necessary procedures to accomplish the work within these Construction Documents to the extent applicable to accomplish the scope of this project.
- D. Ensure means and methods ensure the facilities components are stabilized, shored and protected during demolition and construction.
- E. Establish and maintain security program to ensure site is cleaned up of all materials and equipment at the end of each work day to ensure occupants, pedestrians and individuals have safe secure environment specific to the construction project.
- F. Any applicable requirements for this section may be submitted with the "Demolition Plan" of Section 02 05 00, Demolition and Removal.
- G. Contractor shall adhere to local, state and federal requirements including SCDHEC and OSHA.
 - 1. As a minimum, individuals violating safety requirements will be removed for one day for the first offense and removed permanently for the second offense.
- H. Basis for several requirements in this section is COE EM-385-1-1.
- I. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.

1. SDS sheets are required for all products/materials used for this project. Any products with strong or distinct odors must be identified prior to use and submitted to Consultant/Engineer for review and approval.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. The attention of the Contractor and the Subcontractor of this Section is directed to the Instructions to Bidders concerning substitution of materials and equipment.
- C. Technical Specifications

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 1. ANSI A10.14 (Latest Edition) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use
 2. ANSI Z359.1 (Latest Edition) Safety Requirements for Personal Fall Arrest Systems
- C. ASME INTERNATIONAL (ASME):
 1. ASME B30.5 (Latest Edition) Mobile Cranes
 2. ASME B30.22 (Latest Edition) Articulating Boom Cranes
- D. INTERNATIONAL CODE COUNCIL (ICC):
 1. IBC (2015) International Building Code
 2. IEBC (2015) International Existing Building Code
 3. IFC (2015) International Fire Code
- E. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
 1. NFPA 10 (Currently Adopted Edition) Portable Fire Extinguishers
 2. NFPA 70 (Currently Adopted Edition) National Electrical Code

3. NFPA 241 (Currently Adopted Edition) Safeguarding Construction, Alteration, and Demolition Operations
 4. NFPA (2015) Fire Code
- F. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION:
1. 29 CFR 1926 – Safety and Health Regulations for Construction
- G. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills
- H. U.S. ARMY CORPS OF ENGINEERS (USACE):
1. COE EM-385-1-1 (Latest Edition) Safety and Health Requirements Manual

1.04 DEFINITIONS

- A. **Competent Person.** A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- B. **Confined Space.** A space which, by design, has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- C. **First Aid.** First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- D. **Health and Safety Plan (HASP).** The HASP is the equivalent term of SHP or SSHP used in COE EM-385-1-1.
- E. **Lost Workdays.** The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.

- F. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered personnel.
- G. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Owner considers the general contractor to be the "controlling authority" for all work site safety and health of the subcontractors.
- H. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
- I. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.
- J. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:
 - 1. Fatalities, regardless of the time between the injury and death, or the length of the illness; or
 - 2. Lost Workday Cases, other than fatalities, that result in lost workdays, or
 - 3. Non-Fatal Cases without lost workdays, which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses, which are reported to the employer but are not classified as fatalities or lost workday cases.
- K. Safety Specialist. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.
- L. Significant Accident. Any contractor accident which involves falls of (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.

- M. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.05 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. Plans
 - 1. Accident Prevention Plan (APP) ; G
 - 2. Health and Safety Plan (HASP) ; G
 - a. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.
- C. Reports
 - 1. Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."
 - 2. Crane Reports, if used.
 - 3. Crane Critical Lift Plan, if used.

1.06 QUALITY ASSURANCE

- A. Safety Specialist
 - 1. Qualifications
 - a. Qualifications of Safety Specialist:
 - 1) Ability to manage the on-site contractor safety program through appropriate management controls.

- 2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
 - 3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
 - 4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.
- b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety.
 - c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.
- B. Meetings
1. Preconstruction Conference
 - a. The Safety Specialist shall attend the preconstruction conference.
- C. Meeting on Work Procedures
1. Meet with Owner to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and the Safety Specialist.
 2. Meet with Owner to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control, and the Safety Specialist.
- D. Weekly Safety Meetings
1. Hold weekly meeting at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.
- E. Work Phase Meetings
1. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

F. New Employee Indoctrination

1. New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

G. Plans

1. Accident Prevention Plan (APP)

- a. Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific.

H. Health and Safety Plan (HASP)

1. Submit the HASP for projects involving the handling of hazardous materials with technical submittals in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.

I. Reports

1. Crane Reports, if used.

- a. Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

2. Crane Critical Lift Plan, if used.

- a. Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads meet or exceed 75 percent of the crane load capacity in any configuration.

J. Certificate of Compliance

1. The Contractor shall provide a Certificate of Compliance for each crane under this contract. Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. These certifications shall be posted on the crane.

1.07 ACCIDENT PREVENTION PLAN (APP)

- A. Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of

Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

B. Contents of the Accident Prevention Plan

1. Name and safety related qualifications of safety specialist (including training and any certifications).
2. Qualifications of competent and of qualified persons.
3. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
4. Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.
5. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
6. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract shall include the following as applicable:
 - a. Inventory of hazardous materials to be introduced to the site with estimated quantities.
 - b. Plan for protecting personnel and property during the transport, storage and use of the materials.
 - c. Emergency procedures for spill response and disposal, including a site map with approximate quantities on site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.
 - d. Safety Data Sheets for inventoried materials not required in other section of this specification.
 - e. Labeling system to identify contents on all containers on-site.
 - f. Plan for communicating high health hazards to employees and adjacent occupants.
 - g. Hazardous Energy Control Plan. For hazardous energy sources, comply with COE EM-385-1-1, paragraph 12.A.07.

7. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with COE EM-385-1-1, paragraph 16.H.02.
8. Alcohol and Drug Abuse Plan
9. Describe plan for random checks and testing with pre-employment screening in accordance with state requirements.
10. Description of the on-site prevention program
 - a. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised once every six months for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.
 - b. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.
 - c. Section 02 04 00, Cutting and Patching.
 - d. Section 02 05 00, Demolition and Removal.
 - e. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.
 - f. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities (tornados, hurricanes, or other names storms).
 - g. Barricades, signage and protective walkways.

1.08 ACTIVITY HAZARD ANALYSIS (AHA)

- A. Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and

Safety Requirements

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removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1.09 HEALTH AND SAFETY PLAN (HASP)

- A. Prepare as required by 29 CFR 1910.120 and COE EM-385-1-1.
- B. Qualified Personnel
 - 1. Use a person with sufficient training and experience to prepare the HASP, conduct activity hazard analyses, and prepare detailed plan for demolition, removal, and disposal of materials.
- C. Contents
 - 1. In addition to the requirements of COE EM-385-1-1, Table 28-1, the HASP must include:
 - 2. Location, size, and details of control areas.
 - 3. Location and details of decontamination systems.
 - 4. Interface of trades involved in the construction.
 - 5. Sequencing of work.
 - 6. Disposal plan.
 - 7. Sampling protocols.
 - 8. Testing labs.
 - 9. Protective equipment.
 - 10. Pollution control.
 - 11. Evidence of compliance with 29 CFR 1910.120 and 29 CFR 1926.65.
 - 12. Training and certifications of CIH, CSP or other competent persons.

1.10 DRUG PREVENTION PROGRAM

- A. Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents,

collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Owner upon request.

1.11 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

A. Scaffolds

1. Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

B. Training

1. Institute a fall protection-training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

1.12 DUTIES OF THE SAFETY SPECIALIST

A. Ensure construction hazards are identified and corrected.

B. Maintain applicable safety reference material on the job site.

C. Maintain a log of safety inspections performed.

D. Attend the pre-construction conference as required.

E. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.13 DISPLAY OF SAFETY INFORMATION

A. Display the following information in clear view of the on-site construction personnel:

1. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
2. AHA
3. Confined space entry permit.
4. A sign indicating the number of hours worked since last lost workday accident.

1.14 SITE SAFETY REFERENCE MATERIALS

A. Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

1.15 EMERGENCY MEDICAL TREATMENT

- A. Contractors will arrange for their own emergency medical treatment. Owner has no responsibility to provide emergency medical treatment.

1.16 REPORTS

A. Accident Reports

1. For recordable occupational injuries and illnesses, the general contractor shall conduct an accident investigation to establish the root cause(s) of the accident and notify the owner.
2. For a weight handling equipment accident the General contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete an Accident Report and provide to the Owner within 30 calendar days of the accident.

B. Notification

1. Notify the Owner as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

C. OSHA Citations and Violations

1. Provide the Owner with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Owner.

D. Crane Notification

1. Notify Owner at least 15 days prior to bringing any crane equipment on-site so that the owner may arrange for any additional quality assurance spot checks necessary by the owner.

PART 2 - PRODUCTS

2.01 FALL PROTECTION ANCHORAGE

- A. Fall protection anchorage used during construction shall be completely removed.
- B. Any existing forms of fall protection shall be reviewed by the Contractor for compliance to authorities noted herein and shall become the responsibility of the Contractor.

2.02 CONFINED SPACE SIGNAGE

- A. Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 5 feet.

PART 3 - EXECUTION

3.01 CONSTRUCTION

- A. Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.
- B. Hazardous Material Exclusions
 1. Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. Owner may consider exceptions to the use of any of the above excluded materials upon written request by Contractor.
- C. Unforeseen Hazardous Material
 1. If additional material (such as PCB, lead paint, and friable and non-friable asbestos), is indicated that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Owner immediately.

3.02 PERSONNEL PROTECTION

- A. Fall Protection
 1. Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.
- B. Personal Fall Arrest Device
 1. Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-

retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

C. Fall Protection for Roofing Work

1. Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

- 1) For work within six (6) feet of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, safety nets or other OSHA approved methods.
- 2) For work greater than six (6) feet from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).
- 3) Steep Roofs: Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

D. Safety Nets

1. If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

E. Existing Anchorage

1. Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

3.03 SCAFFOLDING

A. Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed

for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 20 feet in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.04 BARRICADES, SIGNAGE AND PROTECTIVE WALKWAYS

- A. Upon completion of Contractor's staging, sequencing and means/methods decisions, Contractor shall outline proposed plan to Consultant/Owner for approval. Required barricades, signage and protective walkway shall be provided by the Contractor.

3.05 EQUIPMENT

A. Material Handling Equipment

- 1. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- 2. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

B. Weight Handling Equipment

- 1. Cranes must be equipped with:
 - a. Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,
 - b. or Load-Moment Indicating Devices (LMIs).
 - c. Anti-two-block prevention devices.
 - d. Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
 - e. Boom Length Indicator (for telescoping booms).

- f. Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
 - g. Device to prevent uncontrolled retraction of a telescoping hydraulic boom.
- 2. The Contractor shall notify the Owner, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.
- 3. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.
 - a. The Contractor shall comply with ASME B30.5 for mobile cranes and ASME B30.22 for articulating boom cranes.
- 4. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.
- 5. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.
- 6. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.
- 7. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- 8. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- 9. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.
- 10. A Contractor Crane Operation Checklist shall be used by the contractor's representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H).

11. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), COE EM-385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.
12. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.
13. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
14. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.
15. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.
16. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by owner personnel.
17. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the owner personnel.
18. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

3.06 ELECTRICAL

A. Conduct of Electrical Work

1. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Owner and Station Utilities for identification. The Owner will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified

electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

B. Portable Extension Cords

1. Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.07 WORK IN CONFINED SPACES

A. Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

1. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
2. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
3. Ensure the use of rescue and retrieval devices in confined spaces greater than 5 feet in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.
4. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.

3.08 HOUSEKEEPING

A. Clean-up

1. All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

B. Dust Control

1. In addition to the dust control measures required elsewhere in the Construction Documents, dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.09 ACCIDENT SCENE PRESERVATION

- A. For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Owner.

3.10 FIELD QUALITY CONTROL

A. Inspections

- 1. Include safety inspection as a part of the daily Quality Control inspections required in Section 01 20 00, Abbreviated Scope of Work.

3.11 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

A. Safety Gas Containers

- 1. Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

3.12 ASPHALT KETTLES

A. Transporting

- 1. Asphalt (tar) kettles shall not be transported over any highway, road or street when the heat source for the kettle is operating. Exception: Asphalt (tar) kettles in the process of patching road surfaces.

B. Location

- 1. Asphalt (tar) kettles shall not be located within 20 feet of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other approved means. Asphalt (tar) kettles and pots shall not be utilized inside or on the roof of a building or structure. Roofing kettles and operating asphalt (tar) kettles shall not block means of egress, gates, roadways or entrances.

C. Location of fuel containers

- 1. Fuel containers shall be located at least 10 feet from the burner. Exception: Containers properly insulated from heat or flame are allowed to be within 2 feet of the burner.

D. Attendant

1. An operating kettle shall be attended by a minimum of one employee knowledgeable of the operations and hazards. The employee shall be within 100 feet of the kettle and have the kettle within sight. Ladders or similar obstacles shall not form a part of the route between the attendant and the kettle.

E. Fire extinguishers

1. There shall be a portable fire extinguisher complying with Section 906 and with a minimum 40-B:C rating within 25 feet of each asphalt (tar) kettle during the period such kettle is being utilized. Additionally, there shall be one portable fire extinguisher with a minimum 3-A:40-B:C rating on the roof being covered.

F. Lids

1. Asphalt (tar) kettles shall be equipped with tight-fitting lids.

G. Hi-boys

1. Hi-boys shall be constructed of noncombustible materials. Hi-boys shall be limited to a capacity of 55 gallons. Fuel sources or heating elements shall not be allowed as part of a hi-boy.

H. Roofing kettles.

1. Roofing kettles shall be constructed of noncombustible materials.

I. Fuel containers under air pressure

1. Fuel containers that operate under air pressure shall not exceed 20 gallons in capacity and shall be approved.

END OF SECTION 01 20 05

required submittals list

Project Title: USC Aiken Etherredge Roof Repairs
Owner Project No.: H29-9550
ADC Project No.: 19065
Reviewer(s): _____ **Date:** _____
ADC Engineering, Inc.

Submittals are to be forwarded as a single package submission and in accordance with Section 01 20 00, Abbreviated Scope of Work, including:

- 01 20 00 Abbreviated Scope of Work**
 - 1.11 I. Schedule of values, project schedule, existing conditions and safety plan

- 01 20 05 Safety Requirements**
 - 1.05 B. Plans
 - B1. Accident Prevention Plan
 - B2. Health and Safety Plans
 - B2a. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.
 - C. Reports

- 02 04 00 Cutting and Patching**
 - 1.05 C. Proposals for Cutting and Patching

- 02 05 00 Demolition and Removal**
 - 1.05 C. Demolition Plan

- 05 31 23 Metal Roof Deck Repair**
 - 1.04 C. Manufacturer's Catalog Data
 - D. SDS

- 06 10 00 Rough Carpentry**
 - 1.04 C1. Certificate of Pressure Treatment
 - C2. Certificate of Grade
 - C3. Certificate or Letter Defining Fastener Types
 - D. Layout Plan for Carpentry
 - E. SDS

07 55 27 07 55 27 Roof Replacement Modified Bitumen Sheet Roofing System

- 1.04 C. Manufacturer's Assembly Letter
- D. Data and Instructions
- E. Drawings
- F. Mock-Ups
- G. Samples
- H. Warranty
- I. Records
- J. SDS

07 60 00 Sheet Metal

- 1.04 C. Drawings
- D. Samples
- E. Color Samples
- F. Drains and Accessories
- G. SDS

07 73 15 Roof Drain Repairs/Replacement

- 1.04 C. Product Data
- D. Manufacturer Certification
- E. Drawings
- F. Samples
- G. Drains and Accessories
- H. SDS

07 92 00 Sealants for Roofing and Sheet Metal

- 1.04 C. Manufacturer's Catalog Data
- D. Manufacturer's Standard Color Chart
- E. Manufacturer's Instructions
- F. Samples
- G. Sample Installations
- H. Certificates of Compliance
- I. SDS

End of Required Submittal List

AIA[®] Document G702[™] – 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO:	Distribution to:
		PERIOD TO:	OWNER: <input type="checkbox"/>
FROM CONTRACTOR:	VIA ARCHITECT:	CONTRACT FOR:	ARCHITECT: <input type="checkbox"/>
	ADC Engineering, Inc.	CONTRACT DATE:	CONTRACTOR: <input type="checkbox"/>
	1226 Yeamans Hall Road	PROJECT NOS: / /	FIELD: <input type="checkbox"/>
	Hanahan, SC 29410		OTHER: <input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

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

1. ORIGINAL CONTRACT SUM	_____
2. NET CHANGE BY CHANGE ORDERS	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	_____
5. RETAINAGE:	
a. _____ % of Completed Work (Column D + E on G703)	0.00
b. _____ % of Stored Material (Column F on G703)	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	0.00
6. TOTAL EARNED LESS RETAINAGE	0.00
(Line 4 Less Line 5 Total)	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	_____
(Line 6 from prior Certificate)	
8. CURRENT PAYMENT DUE	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE	_____
(Line 3 less Line 6)	
	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS	0.00	0.00
NET CHANGES by Change Order		0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public:
My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

AIA[®] Document G703[™] – 1992

Continuation Sheet

AIA Document, G702TM–1992, Application and Certification for Payment, or G736TM–2009, Project Application and Project Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.

In tabulations below, amounts are in US dollars.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED TO DATE (D + E + F)		H BALANCE TO FINISH (C - G)	I RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD			% (G ÷ C)		
						0.00	0.00%	0.00	
						0.00	0.00%	0.00	
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						0.00	0.00%	0.00	
						0.00	0.00%	0.00	
						0.00	0.00%	0.00	
						0.00	0.00%	0.00	
						0.00	0.00%	0.00	
	GRAND TOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%	\$0.00	\$0.00

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User Notes:

(3B9ADA38)

**THREE-YEAR CONTRACTOR WARRANTY
FOR USC AIKEN ETHERREDGE ROOF REPAIRS**

WHEREAS, _____ of
(Address) _____

Telephone: _____ herein called the "Prime Contractor", has performed the work for the
USC Aiken Etherredge Roof Repairs project.

Owner: University of South Carolina – Aiken
471 University Parkway
Aiken, SC 29801

Type of Building: _____

Address: _____

Area of Work: _____

Date of Acceptance: _____

Warranty Period: **Three Years** Date of Expiration: _____

AND WHEREAS, the Prime Contractor has contracted to warrant said work against leaks and faulty or defective materials and workmanship for the designated Warranty Period; NOW, THEREFORE, the Prime Contractor hereby warrants, subject to the terms and conditions herein set forth, that during the Warranty Period Prime Contractor will at its own cost and expense, make or cause to be made such repairs to or replacements of said work thereof as are necessary to correct faulty and defective work to the satisfaction of the Owner, and as are necessary to maintain said work in a watertight condition. Prime Contractor warrants the said work as required, related and applicable to all Specification Sections and the drawings of the Contract Documents for the **USC Aiken Etherredge Roof Repairs project (ADC Project Number: 19065)**.

This Warranty is made subject to the following terms and conditions:

1. Warranty covers the work within this Contract by the Contractor to said building envelope (roofing, waterproofing and/or exterior walls) components of the systems within the scope of work under this contract and does not cover work by others under other contracts or future defects not directly attributable to work performed.
2. Specifically excluded from this Warranty are damages to the work caused by: a) lightning, hurricane force winds, hailstorm, and other unusual phenomena of the elements; b) fire c) failure of the building envelope (roofing, waterproofing and/or exterior walls) system resulting from structural settlement, excessive deflection, deterioration, and decomposition not caused by this project; d) faulty construction of walls not included in Contract Work, other conditions such as terminations and penetrations not included in the project; and e) activity-related damages (and vandalism) to the building envelope (roofing, waterproofing and/or exterior walls) by others including contractors, maintenance personnel, other persons, animals, whether authorized or unauthorized by Owner. When the work has been damaged by any of the foregoing causes, the Warranty may be null and void for the specific locations affected until such damage has been repaired by the Owner or by another responsible party as so authorized and designated.
3. Other portions or parts of this building not within the scope of this work are not covered under this Warranty.
4. The Prime Contractor is responsible for damages to the facility caused by the scope of work for this project covered by this Warranty.

5. During the Warranty Period, if the Owner allows alteration of the work by anyone other than the Prime Contractor without written consent of the Prime Contractor, including cutting, patching and maintenance in connection with penetrations, alteration of said flashings, attachment of other work, and positioning of anything on the building envelope (roofing, waterproofing and/or exterior walls) system, this Warranty may become null and void at the specific locations upon the date of said alterations, but only to extent said alterations affect work covered by this Warranty. If the Owner engages the Prime Contractor to perform said alterations, the Warranty shall not become null and void, unless the Prime Contractor, prior to proceeding with alteration work, shall have notified the Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate the work as warranted, thereby reasonably justifying a termination of this Warranty in the area of the altered work.
6. During the Warranty Period, if the original use of the building envelope (roofing, waterproofing and/or exterior walls) is changed and it becomes used for use other or service more severe than originally specified, this Warranty may become null and void at the specific locations upon the date of the said change, but only to the extent said change affects work covered by this Warranty.
7. The Owner shall promptly notify the Prime Contractor of observed, known or suspected leaks, defects, failures or deterioration, and shall afford reasonable opportunity for Prime Contractor to inspect the work, and to examine the evidence of such leaks, defects or deterioration regardless of the direct cause or causes.
8. Contractor will promptly inspect reported issues/leaks and if found to be attributed to work performed as part of the scope of this project, make the required repairs within 72 hours of written notification.
 - a. If leaks are found to be from other sources beyond the scope of this warranty, Contractor shall so inform the Owner in writing. There will be no charge for this first service call.
 - b. Future service calls and leak repairs not attributed to contractors work will be for Owner's account. Cost of repairs will be at a fair and reasonable rate. Materials required will be at a maximum of cost plus 15%.
 - c. If the Prime Contractor fails to perform repairs in allotted time frame assigned herein this warranty, this warranty will not be voided by the Prime Contractor because of work performed by Others to repair deficient conditions regardless of whether repairs by Others are temporary or permanent in nature.
9. This Warranty is recognized to be the only warranty of the Prime Contractor on said work, and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to him in cases of building envelope (roofing, waterproofing and/or exterior walls) failure. This warranty shall not void, reduce, restrict or otherwise affect manufacturer warranties or performance bonds. Specifically, this Warranty shall not operate to relieve the Prime Contractor of his responsibility for performance of the original work, regardless of whether the Contract was a contract directly with Owner, or a subcontract with Owner's General Contractor.
10. If an extended warranty is required during the course of construction, the more stringent requirements shall take precedence.

IN WITNESS WHEREOF, this instrument has been duly executed this _____ day of _____ 20 _____

Prime Contractor's Signature: _____

Typed Name: _____

As Its (position): _____

Date: _____

certification of asbestos-free materials

Project Title: USC Aiken Etherredge Roof Repairs
Owner Project No.: H29-9550
ADC Project No.: 19065

1. I am authorized to bind _____
(Company's Name by which I am employed).
2. I certify that no materials on this project will contain asbestos. No asbestos-containing materials will be submitted or installed.
3. I recognize that my company's contract is subject to suspension of payments or termination or both, and that my company is responsible for total asbestos abatement of any materials installed by my company.

Company Name

Name and Title of Authorized Representative

Signature Date

Certification of Asbestos-Free Materials
01 20 50 - 1

19065



Section 01 20 60
Contract Close-Out Checklist

Project: USC Aiken Etherredge Roof Repairs

ADC Project Number: 19065

Substantial Completion Date Awarded:		Date Received by ADC Engineering
1.	Request for Substantial Completion with Contractor Punchlist	
2.	Certificate of Substantial Completion –SE-550 <ul style="list-style-type: none"> • This will be generated by ADC Engineering, Inc. and forwarded for signature once Substantial Completion date is awarded. 	
3.	Contractor's Affidavit of Payment of Debts and Claims - AIA G706 <ul style="list-style-type: none"> • Correct Project Information • Signed and Dated • Notarized and Sealed 	
4.	Contractor's Affidavit of Release of Liens Form – AIA G706A <ul style="list-style-type: none"> • Correct Project Information • Signed and Dated • Notarized and Sealed 	
5.	Consent of Surety to Final Payment - AIA G707 <ul style="list-style-type: none"> • Correct Project Information • Signed and Dated • Notarized and Sealed 	
6.	Information Card <ul style="list-style-type: none"> • Provide hard copy of form for each system • Install exterior copy in designated location at facility 	
7.	Manufacturer's Warranties <ul style="list-style-type: none"> • Provide Manufacturer's Warranties as required by the Contract Documents • Dated on or after Substantial Completion date and signed • Ensure Insulation is included. 	
8.	Operation and Maintenance Data <ul style="list-style-type: none"> • Provide any required / necessary operation / maintenance data for systems 	
9.	Three-Year Contractor Warranty <ul style="list-style-type: none"> • Provide Three-Year Contractor Warranty as required by the Contract Documents • Dated on or after Substantial Completion date and signed • Provide USC 1-Year Guarantee 	
10.	ADC Substantial Completion Inspection Punch List <ul style="list-style-type: none"> • All items signed off by the Contractor as completed 	
11.	ADC Final Completion Inspection Punch List <ul style="list-style-type: none"> • All items signed off by the Contractor as completed 	
12.	List of Materials Used by Specifications Section <ul style="list-style-type: none"> • Provide list of materials / manufacturers 	
13.	Supplier – Address and Phone Numbers <ul style="list-style-type: none"> • Provide list of suppliers for systems 	
14.	Asbestos Close-Out Certifications <ul style="list-style-type: none"> • Provide Certification of Asbestos-Free Materials, included in the Contract Documents, signed and dated. 	
15.	Record Drawings <ul style="list-style-type: none"> • Provide set of contract drawings with all field changes / modifications shown in red 	
16.	Summary of Unit Prices <ul style="list-style-type: none"> • Provide required documentation of required unit prices • Provide summary balance of all unit prices and remaining balance 	
17.	Final Change Order <ul style="list-style-type: none"> • Provide Final Change Order with Unit Prices / Balances included 	
18.	Final Application for Payment <ul style="list-style-type: none"> • Provide Final Invoice, including Final Change Order 	

SECTION 02 04 00

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

- A. This section establishes general requirements pertaining to cutting, fitting, and patching of the work.
1. Portions of this work require cutting and/or patching components of the existing facility. Plan and coordinate this demolition neatly and safely.
 2. Uncover work to provide for installation, inspection, or both, of ill-timed work.
 3. Coring and cutting required for installation of modifying existing drainage outlets and replacement of all existing drains.
 4. Remove all low-sloped roofing, insulation, components and accessories to complete the repairs, modifications and replacements where identified on the drawings.
 5. Cut and completely remove existing coatings and sealants to provide all new sealant joints where identified on the drawings.
 6. Saw-cut masonry veneer joint to widen condition for proper joint configuration.
 7. Remove and replace work not conforming to requirements of the Construction Documents, defective or substandard work.
 8. Survey existing conditions, coordinate shutdowns, have qualified craftsmen disconnect necessary plumbing, mechanical and electrical components.
 9. Make the several parts fit properly, to accomplish the work within these Construction Documents.
- B. Protect building from inclement weather all times.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.

- B. In addition to other requirements specified, upon the Owners request, uncover work to provide for inspection of covered work by the Owner or Owner's representative, and remove samples of installed materials for testing.
- C. Section 01 20 00: Abbreviated Scope of Work
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- H. Section 07 60 00: Sheet Metal
- I. Section 07 73 15: Roof Drain Repairs/Modifications
- J. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI/ASSE Z359.1 (2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
- B. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2015) International Building Code
 - 2. IEBC (2015) International Existing Building Code
- C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
 - 1. NFPA 241 (Currently Adopted Edition) Safeguarding Construction, Alteration, and Demolition Operations
- D. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION:
 - 1. 29 CFR 1926 – Safety and Health Regulations for Construction
- E. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
 - 1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills
- F. U.S. ARMY CORPS OF ENGINEERS (USACE):
 - 1. EM 385-1-1 (2014) Safety and Health Requirements Manual

1.04 QUALITY ASSURANCE

- A. Requirements for building envelope and structural work.
1. General: Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or increase in the load/deflection ratio.
 2. Prior to cutting-and-patching the following categories of work, obtain the Owner's approval to proceed with cutting- and-patching as proposed in the submittal by the Contractor:
 - a. Timber, wood framing, wood framing of curbs and nailers.
 - b. Mechanical, electrical and communication equipment.
 - c. Roof drains/overflow scuppers.
 - d. Metal roofing and decking.
 - e. Raise curbs and mechanical equipment 8 inches above finished roof.
- B. Operational and Safety Limitations
1. This is a academic / arts building with significant importance, value and contents.
 2. General: Do not cut-and-patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.
 3. Prior to cutting-and-patching the following categories of work, and similar categories where directed, obtain the Owner's approval to proceed with cutting-and-patching as proposed in the submittal by the Contractor:
 - a. Roofing, exterior walls, fenestrations, louvers and structural elements should include shoring and structural bracing during work as needed based on construction loads and phasing.
 - b. Primary operational systems and equipment. (Do not overload system with materials/equipment).
 - c. Water / moisture/vapor/air/smoke barriers, membranes and flashings.
 - d. Noise and vibration control elements and systems.
 - e. Temporarily disconnect, and then re-install immediately the control, communication, mechanical and electrical wiring systems.
 - f. Protection of building and contents during construction.

4. Contractor is required to maintain system to protect occupants on interior from falling debris, dust, etc. during construction. Contractor is also required to clean all areas where dust or debris exists as a result of construction.
 5. Monitor and schedule construction noise to ensure function of facility is maintained during construction.
- C. Appearance Requirements - General
1. Do not cut-and-patch work which is observable on the exterior or exposed in occupied spaces of the building, in a manner resulting in a reduction of visual qualities or resulting in substantial evidence of the cut-and-patch work, both as judged solely by the Owner.
 2. Remove and replace work judged by the Owner to be cut-and-patched in a visually unsatisfactory manner.

1.05 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Proposals for Cutting and Patching
1. Submit proposed demolition and removal procedures with the cutting and patching procedures to the Owner for approval before work is started.
 - a. Include description of why cutting-and- patching cannot (reasonably) be avoided, how it will be performed, how structural elements (if any) will be reinforced, products to be used, firms and tradesmen to perform the work, approximate dates of the work, and anticipated results in terms of variations from the work as originally completed (structural, operational, visual and other qualities of significance).
 - b. Where applicable, include cost proposal, suggested alternatives to the cutting and patching procedure proposed, and a description of the circumstances that lead to the need for cutting-and-patching.
 2. Approval by Owner to proceed with proposed cutting-and-patching does not waive the right to later require complete removal and replacement of work found to be cut-and-patched in an unsatisfactory manner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. For replacement of work removed, use materials, which comply with the pertinent sections of these specifications.

2.02 PAYMENT FOR COSTS

- A. Perform all cutting and patching needed to comply with the Construction Documents at no additional cost to the Owner.

PART 3 - EXECUTION

3.01 CONDITIONS

- A. Inspection
 - 1. Inspect existing conditions, including elements subject to movement or damage during sounding, selective demolition, cutting and patching.
 - 2. After uncovering the work, inspect conditions affecting installation of new work.
- B. Discrepancies
 - 1. If uncovered conditions are not as anticipated, immediately notify the Consultant/Engineer and secure needed directions.
 - 2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.
- C. Protection
 - 1. Protect building from inclement weather at all times.

3.02 PREPARATION

- A. Temporary Support: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work.
- B. Protection: Provide adequate protection of other work during cutting-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.

3.03 CUTTING AND PATCHING

- A. General: Employ skilled tradesmen to perform cutting- and-patching. Except as otherwise indicated or approved by the Owner, proceed with cutting-and- patching at the earliest feasible time, in each instance, and perform the work promptly.
- B. Cut work by methods least likely to damage work to be retained and work adjoining. Review proposed procedure with original Installer where possible, and comply with his recommendations.

1. In general, where physical cutting action is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
 2. Comply with the requirements of Section 02 05 00, Demolition and Removal.
- C. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
- D. Restore exposed finishes of patched areas and, where necessary, extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.

3.04 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.
- D. Locate quantities and show their locations on the applicable drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 02 04 00

SECTION 02 05 00

DEMOLITION AND REMOVAL

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the demolition of the following products/accessories/systems to complete the work.
1. Function, access and usage of the facility shall be maintained during the demolition and construction process.
 2. Disconnect, relocate, remove and re-install any interior and exterior items required to complete the work.
 - a. This includes mechanical, electrical, plumbing or communications equipment.
 3. Remove all signage, lights, security cameras, conduits, pipes or other items on the exterior surfaces to permit complete cleaning and preparation of all surfaces.
 4. Selective demolition of the metal decking where rusted, damaged or required removal for abandoned or new penetrations in accordance with Section 05 31 23 Metal Roof Deck Repair.
 5. Demolition of rotted, deteriorated and/or damaged carpentry to permit replacement in accordance with Section 06 10 00, Rough Carpentry.
 6. Complete removal of all roofing, insulation, and all associated components and accessories down to the existing deck in accordance with Section 07 55 27, Roof Replacement Modified Bitumen Sheet Roofing System.
 7. Removal of all other sheet metal components and accessories for replacement in accordance with Section 07 60 00, Sheet Metal.
 8. Removal of all sealants on the systems and adjacent wall surfaces for replacement in accordance with Section 07 92 00, Sealants for Roofing and Sheet Metal.
- B. Contractor shall immediately notify the Consultant/Engineer and the Owner, in writing, when conditions are uncovered which will affect or deter completion of the work in accordance with the Contract Documents.
- C. All demolition shall adhere to ANSI, SCDHEC, and OSHA guidelines and as applicable to Section 01 20 05, Safety Requirements.

- D. Safety Plans should include an SDS list of all products being used as part of a system, but also including substances being used to complete the work (i.e. fuels, solvents, cleaners, etc.). This data should be included within the submittal, and a copy kept on the site.
 - 1. SDS sheets are required for all products/materials used for this project. Any products with strong or distinct odors must be identified prior to use and submitted to Consultant/Engineer for review and approval.
- E. Building must be protected from inclement weather at all times. Contractor shall have plan and materials (means and methods) to protect area areas during inclement weather.
- F. Unit prices and set quantities are included for various items in accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities and documentation is required accordingly.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 01 20 05: Safety Requirements
- D. Section 02 04 00: Cutting and Patching
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- H. Section 07 60 00: Sheet Metal
- I. Section 07 73 15: Roof Drain Repairs/Modifications
- J. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI):
 - 1. ANSI/ASSE A10.6 (2006) Safety Requirements for Demolition Operations
 - 2. ANSI/ASSE Z359.1 (2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

Demolition and Removal
02 05 00-2

- C. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2015) International Building Code
 - 2. IEBC (2015) International Existing Building Code
- D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
 - 1. NFPA 241 (Currently Adopted Edition) Safeguarding Construction, Alteration, and Demolition Operations
- E. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
 - 1. 29 CFR 1926 – Safety and Health Regulations for Construction
- F. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
 - 1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills
- G. U.S. ARMY CORPS OF ENGINEERS (USACE):
 - 1. EM 385-1-1 (2014) Safety and Health Requirements Manual

1.04 GENERAL REQUIREMENTS

- A. Do not begin demolition until Demolition plan is approved and authorization is received from the Consultant/ Engineer.
- B. Remove rubbish and debris from the site daily; do not allow accumulation around the building or grounds.
- C. Coordinate sequencing and temporary shutdowns with occupants and owner.

1.05 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Demolition Plan:
 - 1. Submit proposed demolition and removal procedures to the Consultant/Engineer for approval before work is started.

2. Include procedures for careful removal and disposition of materials while function of building is maintained, a disconnection schedule of effected utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations.
3. State safety precautions to be used during conduct of demolition work

1.06 REGULATORY AND SAFETY REQUIREMENTS

- A. Comply with federal, state, and local hauling and disposal regulations.
 1. In addition to the requirements of the contract clauses, safety requirements shall conform to ANSI A10.6 and applicable OSHA requirements.
- B. Contractor shall assure compliance with applicable safety and fall protection requirements of federal, state and local regulations throughout performance of work.
- C. The Contractor shall make application to all necessary Building Officials/governing bodies and obtain the required permits for work.

1.07 DUST AND DEBRIS CONTROL

- A. Provide adequate protection of areas which will be subject to demolition debris and dust.
- B. Clean up all fasteners, drive pins, nails and sheet metal clippings from ground/roof/horizontal surfaces.
- C. Contractor shall monitor interior and adjacent spaces during the demolition process.
- D. Prevent the spread of dust and debris to the interior portions of the building, to the surrounding grounds, and avoid the creation of a nuisance or hazard in the surrounding area.
- E. Removal of existing work shall be coordinated not to affect current building occupants, pedestrians or function/usage of building.
- F. Do not damage existing substrate or overload assembly with construction traffic, debris or equipment.
- G. Provide protection at roof drains and drain pipes to ensure debris/trash does not enter pipes.
- H. Removal of existing work shall be limited to days where low winds (15 mph or less) unless netting/wind shading are used to ensure roof debris is contained and disposed of properly.
- I. Do not damage existing exterior surfaces, masonry walls, conduits, cables, security equipment, fireproofing, insulation, on underside of the existing roof deck and framing.

1.08 PROTECTION

- A. Provide protection system for roofing and adjacent wall surfaces.
- B. Traffic Control Signs:
 - 1. Where pedestrian safety is endangered in the area of removal work, use traffic barricades with flashing lights.
- C. Ingress/Egress Protection:
 - 1. During the construction period, exits from the building(s) shall not be blocked or impaired without expressed approval of the Agency Life, Safety/Fire Protection Officer
 - 2. Overhead protection and traffic control signs required at all ingress/egress points affected by this work including thoroughfares and adjacent facilities.
- D. Existing Work:
 - 1. Protect existing work, which is to remain in place or be reused.
 - 2. Protect grass, shrubbery and all horizontal (asphalt, concrete and landscaping) surfaces as well as adjacent roof and wall surfaces.
 - 3. Repair items, which are to remain and which are damaged during performance of the work to their original condition or replace with new.
 - 4. Do not overload existing structural system.
 - 5. Interior:
 - a. The interior of the building shall be protected at all times from dust, debris, materials and equipment associated with the roof construction.
 - b. Safety, the uninterrupted function of the building and the protection of the interior contents shall be maintained at all times.
 - c. Disconnect, relocate, remove and re-install any interior items required to complete the work.
- E. Weather Protection:
 - 1. Building must be protected from inclement weather at all times. Contractor shall have plan and materials (means and methods) to protect areas during inclement weather.
 - 2. For portions of the building to remain, protect building interior and materials and equipment from the weather at all times.

3. When removal of the existing roofing system is accomplished, have the materials and workmen ready to provide adequate and temporary covering of exposed areas during inclement weather and at the end of each day's construction.

F. Facilities:

1. It is the Contractor's responsibility to return the structure and any damaged items to their original condition.
2. Protect all mechanical and electrical services and accessories during the demolition process.
3. Temporary removal/disconnection of utilities during the demolition process; shall be accomplished by qualified craftsman.
4. All interruptions in service shall be coordinated with the Consultant/ Engineer and Owner.
5. All surfaces damaged or stained during the construction process shall be the Contractors responsibility to return to its original condition.

G. Adjacent Surfaces:

1. The Contractor shall return to its original state, any damaged shrubbery, grass, concrete, skylights, equipment or other adjacent surface.

1.09 RELOCATIONS

- A. Perform the removal and reinstallation of the relocated items as indicated with workmen skilled in the trades involved.
- B. Repair items to be relocated, which are damaged or replace damaged items with new undamaged items as approved by the Consultant/Engineer.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 EXISTING FACILITIES

- A. Existing Facilities are to be removed as specified, noted or as necessary to accomplish work.
- B. Roof Replacement:
 1. Remove the entire roofing systems (including all underlayment systems) and all related components as required to complete the work.

2. Damaged substrates and moisture is noted to be trapped within these roof systems.
 3. Remove roofing and associated accessories without damage to the adjacent surfaces and roof decks.
- C. Roof Repair:
1. Where indicated on drawings, roof repairs and modifications are required.
 2. Repairs and modifications (penetrations and terminations) are required.
 3. Maintain a protection system for the existing roof system, components and accessories as repairs and modifications are completed.
- D. Substrates:
1. Repair any deteriorated substrates and replace to provide a smooth, level, surface and secure rough carpentry in accordance with Section 06 10 00, Rough Carpentry.
- E. Sealants in Building Envelope
1. Remove existing sealant and backer rod from area of work where shown on the drawings and complete work in accordance with Section 07 92 10, Sealants for Building Envelope.
 2. Extents of work shall be limited to extents specified.
- F. General M/E/P Work Specific to Roof Replacement
1. Disconnect and remove all rooftop mechanical and electrical equipment as necessary to affect roof work in the areas and reinstall upon completion of the work in the area to minimize down time. Provide for extension and modification of service. Utilities, interior components and all connections as necessary to accommodate new heights and locations.
 2. Any cables, wires, satellite or microwave dishes, antennas and rooftop mechanical, electrical or electronic components shall be temporarily disconnected and reconnected by qualified craftsman. This includes roof areas, walls, flashings and adjacent wall areas.
 3. Extend / raise all penetrations, curbs, mechanical, electrical and plumbing components to a minimum 8 inches above the finished roof surface. Provide for extension and modification of service, utilities, interior components and all connections as necessary to accommodate new heights and locations.

4. The underside of the deck and interior of walls has fixtures/conduits/cables and attachments. Contractor shall have qualified craftsman remove and reinstall all affected items related to the completion of the scope of this project.
5. Ensure any M/E/P systems which require a specific contractor to complete the work (i.e. Johnson Controls, Honeywell, Trane, Etc.) are included in the Bid.

3.02 DISPOSITION OF MATERIALS

A. Title of Materials:

1. Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from the job site.
2. Title to the materials resulting from demolition, and materials and equipment removed, is vested in the Contractor upon approval by the Consultant/Engineer of the Contractor's demolition and removal procedures, and authorization by the Consultant/Engineer to begin demolition.
3. The Owner will not be responsible for the condition or loss of, or damage to, such property after notice to proceed.

B. Reuse of Materials and Equipment:

1. Remove and store materials and equipment to be reused to prevent damage, and reinstall as the work progresses.

3.03 CLEANUP

- A. Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas.
- B. Limit to 3/8 cubic yard capacity buggies or other conveyances used on the roofs to transport debris to chute locations.

3.04 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.

- D. Locate quantities and show their locations on the drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 02 05 00

SECTION 05 31 23

METAL ROOF DECK REPAIR

PART 1 - GENERAL

1.01 SUMMARY

- A. This section contains requirements for minor replacement and/or deck coating repair at deteriorated, randomly located sections of existing metal deck.
- B. Repair deck where abandoned penetrations have been removed. Provide insulation to match existing condition and ensure underside of deck at exposed locations match existing conditions. This quantity is included in base bid, and not part of the quantities noted above.
- C. A set quantity is required as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. This quantity is to be included in the Base Bid as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1.02 RELATED REQUIRMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 06 10 00: Rough Carpentry
- F. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- G. Section 07 60 00: Sheet Metal
- H. Section 07 73 15: Roof Drain Repairs/Modifications
- I. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. AMERICAN IRON AND STEEL INSTITUTE (AISI):
 - 1. AISI SG-971 (1996) Specification for the Design of Cold-Formed Steel Structural Members.

C. ASTM INTERNATIONAL (ASTM):

1. ASTM A 1008/A 1008 M (2012a) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardened
2. ASTM A 1011 / A 1011 M (2013) Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
3. ASTM A 653/A 653M (2010) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

D. AMERICAN WELDING SOCIETY, INC. (AWS):

1. AWS D1.1/D1.1M (2006) Structural Welding Code - Steel
2. AWS D1.3 (1998) Structural Welding Code - Sheet Steel

E. FACTORY MUTUAL ENGINEERING AND RESEARCH CORPORATION (FM):

1. FM P7825 (Latest Edition) Approval Guide.

F. INTERNATIONAL CODE COUNCIL (ICC):

1. IBC (2015) International Building Code
2. IEBC (2015) International Existing Building Code

G. STEEL DECK INSTITUTE (SDI):

1. SDI No. 31 (2007) Design Manual for Composite Decks, Form Decks, and Roof Decks
2. Manual of Construction with Steel Deck
3. SDI DDP (2006) Deck Damage and Penetrations

H. UNDERWRITERS LABORATORIES, INC. (UL):

1. UL BMD (Latest Edition) Building Materials Directory.
2. UL 580 (Latest Edition) Tests for Uplift Resistance of Roof Assemblies.

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.

- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Manufacturers catalog data, specifications and installation instructions for each type of decking and accessories.
 - 1. Metal roof deck profile and gage.
 - 2. Various accessories/components.
- D. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 20 05, Safety Requirements.

1.05 QUALITY ASSURANCE

- A. Metal Deck
 - 1. Deck and accessories shall be the products of a manufacturer regularly engaged in the manufacture of metal roof decking.
- B. Wind Uplift
 - 1. The roof deck repair assembly shall adhere to the Factory Mutual requirements for metal decks, including increased attachment at corners and perimeters.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle metal deck in a manner to protect it from corrosion, deformation, and other types of damage.
- B. Exercise care not to damage the material or overload the decking during the construction period. The maximum uniform distributed storage load shall not exceed the design live load.
- C. Replace damaged material.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Galvanizing Repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A 780.
 - 1. Primer/coating shall be zinc-rich or similar material to neutralize and prevent rust spread.
 - 2. Ensure primer is low VOC or no VOC product with low fume/odors.

- B. Galvanizing: ASTM A 653/A 653M, G90.
- C. Aluminum Decking: Any required necessary deck replacement requires a matching aluminum panel, one which will “nest” within the existing decking, or an aluminum plate designed fabricated and installed to meet loads.
- D. Metal Deck shall be minimum 22 gage, and profile to match existing, or neatly rest within.
 - 1. Steel for Painted Metal Deck Units: ASTM A 1008/A 1008 M, grade as required to comply with SDI specifications.
 - 2. Steel Galvanized Metal Deck Units: ASTM A 653/A 653M, grade as required to comply with SDI specifications.
- E. Zinc-Coated Flat sheet for minor deck repairs to be 20-gage.
- F. Miscellaneous Steel Shapes: ASTM A 36.
- G. Sheet Metal Accessories: ASTM A 653/A 653M, commercial quality, galvanized.
- H. Paint: Manufacturer’s baked-on, rust-inhibitive paint, for application to metal surfaces that have been chemically cleaned and phosphate chemical treated.
- I. Charcoal filters and ‘sniff’ test is required at intake mechanical vents and louvers.

2.02 FABRICATION

- A. General: Form deck units in lengths to span three or more supports, with flush, telescoped, or nested 2-inch laps at ends and interlocking or nested side laps, of metal thickness, depth, and width as indicated.
- B. Roof Deck Units: Provide deck configurations that comply with SDI "Specifications and Commentary for Steel Roof Deck."

PART 3 - EXECUTION

3.01 GENERAL

- A. Install deck units and accessories in accordance with manufacturer’s recommendations, shop drawings, and as specified herein.
- B. Repairs to steel deck to be in accordance with Steel Deck Institute "Deck Damage and Penetrations" guide.
- C. Aluminum Decking: Installation shall be in line with criteria and guidelines of the SDI manual for Deck Damage and Penetrations for aluminum.

3.02 INSTALLATION

- A. Replace full deck panels unless approved otherwise by Consultant/Engineer.
- B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.
- C. Align deck units for entire length of run of cells and with close alignment between cells at ends of abutting units.
- D. Place deck units flat and square, secured to adjacent framing without warp or deflection.
- E. Do not place deck units on concrete supporting structure until concrete has cured and is dry.
- F. Fastening Deck Units:
 - 1. Tack weld or use self-tapping No. 8 or larger machine screws at 6" on center. for fastening end closures.
 - 2. Fasten roof deck units to steel supporting members by not less than 1/2-inch-diameter puddle welds or elongated welds of equal strength, spaced not more than 12 inches at every support, and at closer spacing where indicated. In addition, secure deck to each supporting member in ribs where side laps occur.
 - 3. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.
 - a. Use welding washers where recommended by deck manufacturer.
 - 4. Mechanical fasteners, either powder-actuated or pneumatically driven, may be used in lieu of welding. Locate mechanical fasteners and install in accordance with deck manufacturer's instructions.
 - 5. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36 inches o.c., using self-tapping No. 8 or larger machine screws.
 - 6. Uplift Loading: Install and anchor roof deck units to resist gross uplift loading of 45 lbs. psf at eave overhang and 30 lbs. psf for other roof areas.
 - a. Keep the interiors of cells that will be used as raceways free of welds having sharp points or edges.
- G. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.

- H. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking, and support of other work shown.
- I. Closure Strips: Provide metal closure strips at open uncovered ends and edges of roof decking and in voids between decking and other construction. Weld into position to provide a complete decking installation.
 - 1. Provide flexible closure strips instead of metal closures, at Contractor's option, wherever their use will ensure complete closure. Install with adhesive in accordance with manufacturer's instructions.
- J. Touch-Up Painting: After decking installation, wire brush, clean, and paint scarred areas, welds, and rust spots on top and bottom surfaces of decking units and supporting steel members.
 - 1. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.
 - 2. Touch-up painted surfaces with same type of shop paint used on adjacent surfaces.
- K. In areas where shop-painted surfaces are to be exposed, apply touch-up paint to blend into adjacent surfaces.

3.03 GALVANIZING/COATING

- A. Remove all surface rust with wire brush in areas identified to be re-coated.
- B. Install new primer/coating to prepared surfaces and allow to dry prior to roof installation.

3.04 ACCESSORIES

- A. Install cover plates, adjusting plates, finish strips, closures and closure sheets as necessary to complete the work.
- B. Install finish strips and closure sheets so as to lap one support a minimum of 2 inches.

3.05 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.
- D. Locate quantities and show their locations on the applicable drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 05 31 23

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SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes all new carpentry, which is required at all perimeter locations, terminations and penetrations to complete the work unless specifically noted otherwise.
- B. All treated / waterproof carpentry shall have underlayment to provide separation with sheet metal.
- C. Removal of all loose nails / fasteners, replacement with new wood screws and the random addition of fasteners is included.
- D. A set quantity is required as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. This quantity is to be included in the Base Bid as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.
 - 1. Unless specifically noted otherwise, contractor may assume existing nailers/carpentry can be reused. Any carpentry found to be damaged or deteriorated, shall be replaced based on the quantities listed Section 01 20 00, Abbreviated Scope of Work, Quantities.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- G. Section 07 60 00: Sheet Metal
- H. Section 07 73 15: Roof Drain Repairs/Modifications
- I. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. AMERICAN FOREST & PAPER ASSOCIATION (AF&PA):
 - 1. AFPA T101 (2005) National Design Specification for Wood Construction
- C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE):
 - 1. ASCE 7 (2010) Minimum Design Loads for Buildings and Other Structures
- D. AMERICAN WOOD PRESERVERS BUREAU (AWPB):
 - 1. AWPB LP22 Standard for Softwood Lumber, Timber, and Plywood Pressure Treated with Waterborne Preservatives for Ground Contact Use
- E. AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA):
 - 1. AWPA U1 (2015) Use Category System: User Specification for Treated Wood
 - 2. AWPA M6 (2013) Brands Used on Forest Products
- F. APA – THE ENGINEERED WOOD ASSOCIATION (APA):
 - 1. APA E30 (2011) Engineered Wood Construction Guide
 - 2. APA E445 (2002) Performance Standards and Policies
 - 3. APA PS 1 (2007) Voluntary Product Standard for Construction and Industrial Plywood
 - 4. APA PS 2 (2010) Voluntary Product Standard for Wood-Based Structural-Use Panels
- G. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C1396 / C1396M (2014) Standard Specification for Gypsum Board
 - 2. ASTM F 1667 (2013) Driven Fasteners: Nails, Spikes, and Staples
- H. FACTORY MUTUAL ENGINEERING AND RESEARCH (FM):
 - 1. FM DS 1-49 (Latest Edition) Perimeter Flashing

- I. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2015) International Building Code
 - 2. IEBC (2015) International Existing Building Code
- J. SOUTHERN PINE INSPECTION BUREAU (SPIB):
 - 1. SPIB 1003 (2002) Southern Pine Inspection Bureau Grading Rules
- K. U.S. DEPARTMENT OF COMMERCE (DOC):
 - 1. DOC/NIST PS1 (1995) Construction and Industrial Plywood with Typical APA Trademarks

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. A letter from the contractor may be provided that states the grade, size, fasteners and pressure treatment to be used.
 - 1. Certificate of Pressure Treatment
 - 2. Certificate of Grade
 - a. Drawing Requirements for rough carpentry indicate materials, details of constructions, methods of fastening, and erection details. Submit drawings for all proposed modifications of structural members. Do not proceed with modifications until the submittal has been approved.
 - 3. Certificate or letter defining fastener types for applications to CA, ACQ or MCQ wood treatment.
- D. Layout Plan for Carpentry
- E. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 20 05, Safety Requirements.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site in an undamaged condition.
- B. Storage: Carefully store materials in enclosed trailer providing proper ventilation, drainage, and protection against dampness.

- C. Handling: Remove defective and damaged materials and provide new materials.
- D. Ensure grade marks are present on all lumber.

1.06 MOISTURE CONTENT

A. General:

- 1. Air or kiln treated lumber after treatment.

B. Moisture Content:

- 1. Maximum moisture content of wood products shall be as follows at the time of delivery to the job site and stored properly to eliminate any further exposure.
 - a. All lumber and boards - 19% maximum.
 - b. Materials other than lumber or moisture content shall be in accordance with referenced standard.

1.07 PRESERVATIVE TREATMENT

- A. All lumber and timber shall be treated in accordance with AWPA U1 or approved equal. Treatment shall be a minimum .25 for above grade use. This includes nailers, edge strips, crickets, curbs, blocking, and cants for new roofing system.
- B. Equivalent treatment methods / products, such as Alkaline Copper Quaternary (ACQ), Micronized Copper Quaternary (MCQ) or Copper Azole (CA) will be considered under the substitution process. Substitution request must address the proposed fasteners / types that will be used.
- C. Any wood, nailers or other rough carpentry using Copper Azole (CA), Alkaline Copper Quaternary (ACQ) or Micronized Copper Quaternary (MCQ) treatment will require verification of the following:
 - 1. Separation of aluminum/galvalume sheet metal from the rough carpentry.
 - 2. Type of fasteners acceptable for attachment into these woods (such as stainless steel).
 - a. Fasteners for wood to wood connectors.
 - b. Fasteners thru metal into wood.
- D. All wood shall be air or kiln dried after treatment.
- E. Plywood Sheathing, AWPA, U1.

PART 2 - PRODUCTS

2.01 LUMBER

- A. Framing Lumber: Nailers, framing edge strips, sleepers for backnailing, crickets, curbs and cants.
 - 1. Wood cants are required, except at pre-fabricated curbs such as roof scuttles, exhaust fans, etc.
- B. Grade of Lumber shall be No. 2 or better.

2.02 PLYWOOD

- A. Plywood to repair existing plywood or used in combination with nailers shall match in thickness and shall be exterior grade and pressure treated material.
- B. Plywood used with nailers shall be sandwiched between nailers.
- C. Plywood for overlayment shall be a minimum 5/8 inch exterior grade and pressure treated.

2.03 FASTENERS

- A. Fasteners shall be compatible with the materials being fastened and shall provide for secure, firm attachment.
- B. Exposed fasteners shall have domed head with integral metal washer and rubber gasket.
- C. Fasteners shall be hot dipped galvanized steel, stainless steel, bronze or copper as a minimum. Wood treatment may require specific type of fasteners.
- D. Do not use impact-driven fasteners. Use pre-drilled, screw-type fasteners.
- E. Only stainless steel fasteners shall be used to connect dissimilar metals.

2.04 ROUGH HARDWARE

- A. Unless otherwise indicated or specified, rough hardware shall be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials shall be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry, or concrete walls or slabs shall be zinc-coated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Conform to NFP WCD1 unless otherwise indicated or specified.
- B. Fit framing lumber accurately to the required lines and levels to match existing nailers, which shall be removed.
- C. Set nailers with their crown edge up.

3.02 WOOD ROOF NAILERS, EDGE STRIPS, CURBS AND CANTS

- A. General:
 - 1. Provide sizes and configurations to match existing conditions at edge perimeters, curbs, and expansion joints.
 - 2. Thicknesses to match insulation thicknesses and minimum 2 x 6, unless specifically noted otherwise.
 - 3. If multiple layers, attach each layer independently and minimum 1 1/2 inch thickness at top, when applicable.
- B. Raise all penetrations a minimum of 8 inches above the finished roof.
- C. Wood Blocking Attachment
 - 1. Steel Substrate
 - a. A minimum 3/4 inch diameter bolt tapped into a structural member or into bar joists between 48 inches on center.
 - b. Attachment to metal deck requires #12 fastener 12 inches on center and 6 inches on center at corners.
 - c. Seal or fill gaps or separation in the metal deck at terminations at penetrations to control debris and odors from entering facility.
 - d. The corner shall be defined as a minimum of 10 feet and increased based on ASCE 7 guidelines.
 - e. This may require attachment to structural framing.
 - 2. If other substrate/edge conditions exist, the Contractor shall provide attachment to resist 250 pounds per square linear foot in all directions and increased by 100% at corners.

- a. The corner shall be defined as a minimum of 10 feet and increased based on ASCE 7 guidelines.
- b. This may require attachment to structural framing.

D. Nailers/Fasteners

1. A 1/4 inch gap between nailers is required.
2. Pre-drilled holes for attachment.
3. Nails used to secure multiple nailers should be long enough to penetrate the base wood blocking 1 1/4 inch. A fastener shall be placed 3 inches from each end and double rows spaced 24 inches on center and staggered is required.
4. Joints in nailers shall be staggered in multiple layer applications and shall have interlocked corners.
5. Nails should be installed at angles.
6. Nailers used to raise curbs of mechanical units, skylights and other penetrations shall be installed level.

E. Nailer Configurations

1. Match nailer thicknesses with insulation thicknesses including tapered insulation.
2. Stack nailers with joints staggered and plywood sandwiched between nailers.
3. Contractor may elect to build a 'box' configuration or 'stud wall' assembly with voids filled with insulation in lieu of a 'stacked' configuration.

3.03 BASE FLASHING SECUREMENT

- A. Where a nailable substrate does not exist for the securement of the base flashing, provide a 24 gage, galvalume sheet metal securement strip to the wall at all base flashing locations.

3.04 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.

- D. Locate quantities and show their locations on the applicable drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 06 10 00

SECTION 07 55 27

ROOF REPLACEMENT MODIFIED BITUMEN SHEET ROOFING SYSTEM (WITH INSULATION)

PART 1 - GENERAL

1.01 SUMMARY

- A. Work of this section includes insulation and a two-ply roof membrane system consisting of a modified bitumen base sheet followed by a granule-surfaced, SBS modified bitumen cap sheet.
1. Two-ply SBS modified bitumen membrane flashings in a woven application is required.
 2. Roof system attachment to the minimum 22 gage metal roof decks shall be in accordance with FM 1A-90 requirements.
 - a. Mechanical fasteners shall extend through the bearing surface of the roof deck a minimum 3/4-inch. Fasteners shall not penetrate lower metal deck flute. Fasteners shall be in accordance with the requirements of FM Loss Prevention Data Sheets.
 - b. Increased attachment shall be provided at perimeter and corners in accordance with FM requirements. Dimensional extents of perimeters and corners shall be as defined by the requirements of ASCE 7.
 3. Minimum flashing height shall be 8 inches unless approved in writing prior to bid.
 4. Base sheets shall be fully adhered in approved adhesive and cap sheet fully adhered in cold applied adhesive.
 5. Side laps and end laps shall be welded.
- B. Roof Insulation assembly shall:
1. Provide an average R-Value of 22 per roof area above the deck.
 2. Based on slopes provided with decks, ensure roof areas have a positive slope of for the primary and secondary slopes and provides positive drainage. See Tapered Roof Plan(s).
 3. First layer of insulation shall be a minimum 1.5" thick and sufficient to span metal deck openings.
 4. Insulation shall adhere to wind and fire ratings specified.
 5. Insulation shall be covered under roof warranty.

Roof Replacement Modified Bitumen Sheet Roofing System (With Insulation)

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- C. Work in this section also includes roof insulation for the modified bitumen roof membrane system, associated components and accessories over the existing roof deck.
- a. Mechanically fasten first layer of polyisocyanurate roof insulation to the roof deck with increased fasteners at perimeters and corners.
 - 1) Proceeding layers are to be adhered. Gang screw attachment is not permitted unless required by manufacturer to meet the specified wind uplift system rating.
 - b. Provide secondary slope as indicated on the Tapered Roof Plan(s).
 - c. Secondary slopes shall have a start thickness no greater than 1/8-inch. Where tapered polyisocyanurate insulation is used, provide a tapered edge strip at the starting edge of the cricket to ensure start thickness is as required. Install tapered edge strips in hot asphalt or manufacturer's approved adhesive.
 - d. For all roof areas/levels, provide overlay/coverboard minimum thickness of 1/2-inch modified, gypsum roof coverboard installed/secured to attain the specified wind/ fire resistance.
 - e. Insulation thickness shall be coordinated for wood nailer thickness and adjacent boards within 1/4-inch tolerance in all directions. See Section 06 10 00, Rough Carpentry for specific rough carpentry requirements.
- D. Sheet metal flashings and accessories are required as specified in Section 07 60 00 Sheet Metal, and the required details for the various penetrations and terminations are shown on the drawings.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 60 00: Sheet Metal
- H. Section 07 73 15: Roof Drain Repairs/Modifications
- I. Section 07 92 00: Sealants for Roofing and Sheet Metal

Roof Replacement Modified Bitumen Sheet Roofing System (With Insulation)

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1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C 208 (2017) Standard Specification for Cellulosic Fiber Insulating Board
 - 2. ASTM C 728 (2017) Standard Specification for Perlite Thermal Insulation Board
 - 3. ASTM C 1289 (2018) Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
 - 4. ASTM D 41 / D 41 M (2016) Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
 - 5. ASTM D 312 (2000) Asphalt Used in Roofing
 - 6. ASTM D 1970 / D 1970 M (2018) Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
 - 7. ASTM D 5147 / D 5147 M (2018) Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material
 - 8. ASTM E 84 (2018) Standard Test Method for Surface Burning Characteristics of Building Materials
 - 9. ASTM E 108 (2017) Standard Test Methods for Fire Tests of Roof Coverings
- C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE):
 - 1. ASCE 7 (2010) Minimum Design Loads for Buildings and Other Structures
- D. COOL ROOF RATING COUNCIL (CRRC)
 - 1. CRRC – 1 Standard
- E. FACTORY MUTUAL ENGINEERING AND RESEARCH CORPORATION (FM):
 - 1. FM 4474 (Latest Edition) Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures
 - 2. FM AS 4470 (Latest Edition) Class I Roof Covers
 - 3. FM P7825 (Latest Edition) Approval Guide

- F. INTERNATIONAL CODE COUNCIL
 - 1. IBC (2015) International Building Code
 - 2. IEBC (2015) International Existing Building Code
- G. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
 - 1. NRCA Roofing and Waterproofing Manual, Fifth Edition
 - 2. NRCA Construction Details for Modified Bitumen Sheet Roofing
 - 3. NRCA/ARMA/SPRI Repair Manual for Low Sloped Roof Systems
- H. UNDERWRITERS' LABORATORIES, INC. (UL):
 - 1. UL 580 (Latest Edition) Tests for Uplift Resistance of Roof Assemblies
 - 2. UL 790 (Latest Edition) Tests for Fire Resistance of Roof Materials
 - 3. UL 1897 (Latest Edition) Uplift Tests for Roof Covering Systems
 - 4. UL BMD (Latest Edition) Building Materials Directory

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Manufacturer's Assembly Letter
 - 1. Approval of Applicator: The modified bitumen roofing system manufacturer's written approval of the applicator for this specific roofing job and a statement, in writing, that the specified applicator requirements are met and the warranty can be provided.
 - 2. Certificates of Conformance: The roofing and insulation manufacturer shall ensure and certify all material of the roofing system are compatible with each other, suitable for the specified use, and meet the requirements of the specifications.
- D. Data and Instructions:
 - 1. Roofing and Insulation Manufacturer's Data with any applicable sections/items, which apply to this job clearly marked and/or indicated.

2. Binder shall include detailed application instructions only proposed detail, deviations/variations from the Contract drawings.
 3. Explicitly identify in writing any differences between contract requirements and manufacturer's instructions.
- E. Drawings
1. Tapered Roof Insulation System
 - a. Show a complete description of the procedures for the installation of each phase of the system indicating the type of materials, thicknesses, identify codes, sequence of laying insulation, location of ridges and valleys, special methods for cutting and fitting of insulation and special precautions.
 - b. The drawings shall be based on field measurements
 2. Insulation: Include minimum thickness of insulation for steel decks and fastener pattern for insulation on all deck types.
- F. Mockups: Provide field mockups of sheet metal assemblies where noted on drawings.
- G. Samples: One sample of the roof membrane and insulation materials and each associated accessory shall be provided at the Pre-Construction Conference.
- H. Warranty: Copy of warranty application from contractor to modified bitumen roof manufacturer with specific criteria in accordance with these Construction Documents.
- I. Records
1. Information Card(s)
 - a. For each assembly, submit a photocopy or typewritten information card containing the information as listed on the listed at the end of this section.
- J. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 20 05, Safety Requirements.

1.05 QUALIFICATION OF APPLICATOR

- A. Qualifications of Applicator
1. Applicator shall be approved in writing by the system manufacturer and shall have a minimum of 5 years experience as an approved applicator with the specific manufacturer.
 2. Contractor shall be certified/approved to provide the required warranty.
 3. Applicator shall also have applied 5 installations of similar size and scope as this project, within the previous 3 years.

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1.06 PERFORMANCE REQUIREMENTS

- A. Roof system shall adhere to the material standards as listed in Chapter 15 of the IBC.
- B. Adhered or mechanically fastened systems shall meet the specific FM rating, adhere to the uplift forces listed in conformance with Chapter 16, 1609, Wind Loads of the IBC.
- C. Another option is to provide membrane roof covering testing in accordance with FM 4474, UL580 or UL 1897.
- D. Fire Safety
 - 1. The complete roof covering assembly shall have a UL 790, Class A Classification, be listed as "fire classified" in UL BMD and bear the UL Label or be listed as a Class I Roof Deck Construction in FM P7825 for the slopes indicated.
 - 2. Surfacing provided to meet the required reflectivity rating must also adhere to the required fire ratings.
- E. Insulation on Non-Combustible Decks
 - 1. Roof insulation shall have a flame spread rating not greater than 25 and a smoke developed rating not greater than 150, exclusive of covering, when tested in accordance with ASTM E 84.
 - 2. Insulation bearing the UL label and listed in the UL BMD as meeting the flame spread and smoke developed ratings will be accepted in lieu of copies of test reports.
 - 3. Compliance with flame spread and smoke developed ratings will not be required when insulation has been tested as part of a roof construction assembly of the type used for this project and the construction is listed as fire-classified in the UL BMD or listed as Class I roof deck construction in the FM P7825.
 - 4. Insulation tested as part of a roof construction assembly shall bear UL or FM labels attesting to the ratings specified herein.

1.07 PRE-CONSTRUCTION CONFERENCE

- A. Prior to the application of any construction, there will be a Pre-Construction Conference at the job site to ensure:
 - 1. A clear understanding of the drawings and specifications.
 - 2. Clear understanding of scope of work for all interested parties.
 - 3. Coordination of work while maintaining the function and use of the building.
 - 4. Safety requirements
- B. All personnel that will be involved with the project, including the project manager, foreman, etc. must be present at the Pre-Construction Conference.

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1.08 DELIVERY AND STORAGE

A. Delivery:

1. Materials shall be delivered to the site in an undamaged condition, and in a timely order for incorporation in the work.
2. Materials shall be delivered to the site in the original sealed containers or packages, and shall bear the manufacturer's name and brand designation.
3. Each container of asphalt shall be plainly marked with the specification number, type, and class, along with the FP, FBT, and EVT.

B. Storage:

1. All roofing and insulation materials shall be stored in a watertight container at the job site, with materials secured in this container at the end of each day.
2. Do not store more materials on the roof than can be installed the same day and remove unused materials at the end of each day.
3. Materials shall be stored, handled, and installed in a manner to protect them from all damage and wetting and moisture absorption during the entire construction period.
4. Rolled materials shall be stored on end.
5. Immediately remove damaged materials from the job site and replace with new material.

C. Handling:

- a. Select and operate material handling equipment so as not to damage applied roofing and damage to grounds.
- b. Prevent damage to edges and end of roll materials.

1.09 ENVIRONMENTAL CONDITIONS

- A. Do not install roofing system during precipitation, including fog, or when air temperature is below 40 degrees F, or when there is ice, frost, moisture, or visible dampness on the roof deck.

1.10 DIFFERING SITE CONDITIONS

- A. The contractor will notify the Consultant/Engineer immediately of any unforeseen site condition.
- B. The contractor will be required to secure the jobsite and "dry-in" the roofing system until the problem is resolved.

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1.11 PROTECTION OF PROPERTY

- A. Install protective measures on grounds and walls (as needed) to protect project conditions.
- B. Ensure the roofing system is watertight at the end of each day's construction and during inclement weather.

1.12 CONTROL OF ODOR / FUMES

- A. Minimize asphalt, adhesive and coating/paint odors and fumes during course of the work to the furthest extent possible based on building, setup, location, winds, etc.
 - 1. Use of adhesives, coatings or primers also requires charcoal filters and "sniff" tests with tenants/occupants/owner prior to commencing work.
- B. Air intake vents shall be shut off, closed, or blocked when roofing work occurs with twelve (12) feet of intake vent.
 - 1. Provide minimum seventy-two hours notice to owner personnel prior to shutting off, closing or closing intake vents.
 - 2. Damage to equipment from failure to shut off when air intake was inoperable, shall be repaired by the Contractor.
 - 3. Intakes shall be opened when work is complete in the area.
- C. Control of fumes/odors:
 - 1. Use of no VOC or low VOC products shall be utilized during construction when possible.
 - 2. Air intakes, vents, etc. shall be shut off, closed or blocked when fumes or odors are possible which may impact the owner/occupants. Coordinate work of their nature with owner/occupant and Consultant/Engineer prior to performing work.
 - 3. Use blowers or fans when working around intakes/openings to direct fumes/odors/smoke away from these areas.

1.13 WARRANTY

- A. Contractor and manufacturer warranties shall be exclusive and independent of each other. Each warranty shall run directly to the Owner and be dated the substantial completion date or later.
- B. Furnish the Three-Year Contractor Warranty as provided in Section 01 20 45, Three-Year Contractor Warranty. The warranty period shall be not less than 3 years from the date of substantial completion.

1. If the Contractor fails to perform repairs within seventy-two (72) hours of written notification, the warranty will not be voided because of work being performed by others to repair roofing regardless of manufacturer's warranty to the contrary.
- C. Manufacturer's Warranty: Furnish the roof manufacturer's twenty (20) year, no dollar limit warranty to include the following:
1. The warranty shall cover all associated costs for the repair and/or replacement of defective materials of the roof system, including insulation.
 2. The warranty shall provide that if within the warranty period the roof deteriorates, splits, weathers excessively or shows any other symptoms of failure, the complete corrective action shall be the responsibility of the manufacturer.
 3. The warranty shall include wind events up to 74 miles per hour.

PART 2 - PRODUCTS

2.01 DESCRIPTION OF ROOFING SYSTEM

- A. SBS Modified Bitumen Two-Ply Roof System with two-ply woven base flashings and insulation.
- B. Deck Type
 1. Over the metal deck, provide the mechanically fastened base layer of insulation.
- C. Substrate: Deck
- D. Assembly

<u>Components</u>	<u>Quantity</u>
Roof Insulations	As Specified
Mechanical Attachment / Dual Component Adhesive	As Specified
Overlay Board / Coverboard	As Specified
SBS Modified Bitumen Base Sheet MB	1 ply
SBS Modified Bitumen Cap Sheet RSS	1 ply
Manufacturer's Cold Adhesive	Per Manufacturer

2.02 MATERIALS

- A. Adhesive
 1. Cold Process Adhesive:
 - a. Roof membrane manufacture's adhesive specifically intended for the use of roof membrane adhesive and compatible with roof system components.

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- b. Apply at rate in accordance with manufacturer's printed literature.
 - c. Adhesives shall adhere to all VOC limitations and requirements.
- B. Roof Insulation: The following materials meeting the respective requirements, used as specified or required.
- 1. Polyisocyanurate Board: ASTM C 1289
 - a. Factory bonded between outer layers of felt, and maximum 4 feet x 8 feet in size for mechanically fastened applications and 4' by 4' in size for adhered applications, with minimum compressive strength of 20 p.s.i.
 - b. Polyisocyanurate board may be directly applied to metal and combustible roof decks, provided the board meets all fire-acceptable requirements specified in subparagraph "Fire Classification".
 - c. Maximum thickness is 2.2 inches, unless otherwise approved.
 - 2. Coverboard
 - a. Overlay: 1/2-inch modified, gypsum roof coverboard, 4'x4' maximum size for adhered application.
 - 1) Glass mat, modified gypsum roof board shall meet the minimum requirements of ASTM C 1177/C 1177M, flame spread – 0, smoke developed – 0, 500 psi Class A non-combustible, equal to Densdeck or Securock and compatible with manufacturer's system products.
 - 3. Tapered Roof Insulation
 - a. See Tapered Roof Plan(s) for requirements for primary and secondary slopes.
 - b. Provide starter and filler blocks as required to provide the total thickness of insulation necessary to meet the specified.
 - c. Mitered joints shall be factory fabricated and shall consist of two diagonally cut boards or one board shaped to provide the required slopes.
 - d. Identify each piece of tapered insulation board by color or other identity coding system, allowing the identification of different sizes of tapered insulation board required to complete the roof insulation system.
 - e. All roof areas shall have a positive drainage.
 - 4. Wood Nailers: Nailers for perimeter of roof and at penetrations and terminations, are specified under Section 06 10 00, Rough Carpentry, and the same thickness as the insulation in all locations.

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5. Cants, Crickets and Tapered Edge Strips:
 - a. Fabricated of the same material as the insulation or rigid perlite board, ASTM C 728.
 - b. Cants shall have 4” vertical height.
 - c. Wood cants shall be used where indicated or noted on drawings.
- C. Base Sheet:
 1. Provide the manufacturer’s recommended base sheet over nailable and pourable decks.
- D. Membrane Base Sheet Assembly:
 1. One-ply, modified bitumen base sheet installed in watershedding, shingle fashion with a maximum course exposure 34” unless approved in writing otherwise.
 2. Base Sheet: SBS Modified Bitumen, ASTM D 6163, Type I or ASTM 6164, Type I. Minimum 80 mil thickness for each sheet.
- E. Cap Sheet:
 1. Granule surfaced-white in color.
 2. ASTM D 6163, Type II or ASTM 6164, Type II 130 mils thick minimum.
 3. External Class A, fire-rated sheet.
 4. Protect modified bitumen roofing system from direct exposure to the weather with mineral roofing granules, factory applied and applied in field at side and end laps immediately after membrane is laid in bitumen.
 5. Head laps of field cap sheet may be hot air welded via use of a hot air welder robot (leister) modified for modified bitumen membrane use and roller. Torch use is not acceptable.
- F. Flashing Materials:
 1. Two-ply SBS modified Bitumen Flashing System (1st ply same as base sheet assembly membrane, 2nd ply same granular surfaced cap sheet membrane). Both plies, fully adhered in bitumen/adhesives.
 2. Side laps secured and sealed in accordance with manufacturer’s printed requirements.
- G. Primer: ASTM D 41.

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- H. Asphalt Roof Cement: ASTM D 4586 / D 4586 M, Type II for vertical surfaces; Type I for horizontal surfaces and compatible with membrane system.
- I. Granules: Broadcast into adhesive bleed-out. Use manufacturer's granules to match cap sheet. Color white. Adhere to manufacturer's printed requirements for other surfacing material.
- J. Adhesive/Bitumen Coating: Use manufacturer's field coating for bleed-out coverage. This is required especially where hot air welded side and head laps are performed.
- K. Fasteners: Provide non-corrosive fasteners as recommended by the Modified Bitumen Sheet manufacturer's printed instructions and meeting the requirements of FM A/S4470.
 - 1. For felts, use fasteners driven through metal discs or one-piece composite fasteners with heads not less than one inch in diameter or one inch square with rounded or 45-degree tapered corners.
 - 2. Masonry Walls and Vertical Surfaces:
 - a. Fasteners for Securing Felts, Modified Bitumen Sheets and Metal Items to Masonry Walls and Vertical Surfaces:
 - 1) Hardened steel nails with flat heads, diamond shaped points and mechanically deformed shanks not less than one inch long.
 - 2) Use power-driven fasteners only when approved in writing.
- L. Metal Discs (Tin Caps):
 - 1. Flat non-corrosive fasteners as recommended by the modified bitumen manufacturer's printed instructions and meeting the requirements of FM A/S4470; not less than 3 inches in diameter, when using screw type fasteners.
 - 2. Discs shall be formed to prevent dishing or cupping.
- M. Walkpads:
 - 1. Walkways shall be the manufacturer's material and compatible with the modified bitumen sheet roofing installed as recommended by the modified bitumen sheet roofing manufacturer.
 - 2. Provide walkpads at all ingress/egress points and all access panels to mechanical equipment, spaced 12 inches apart to ensure proper drainage.
 - 3. Also provide beneath/below non-penetrating supports and splash pans on roofs.
- N. Waterproof Underlayment
 - 1. To be installed beneath all sheet metal components and accessories.
 - 2. Smooth surfaced, self-adhering, polymer modified membrane, ASTM D 1970 / D 1970 M, and compatible with roofing system.

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PART 3 - EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Ensure that the following conditions exist prior to application of the insulation materials.
1. All surfaces on which insulation and are to be applied shall be clean, smooth, dry, and free of projections.
 2. The condition of the surfaces shall be inspected and approved immediately before the work is begun.
 3. Confirmation shall be provided that any required deck inspection or certification by other parties has been completed.
 4. Check roof deck surfaces, including surfaces sloped to roof drains and outlets, for defects before starting work.
 5. The Roofing Contractor shall review and approve the surfaces for acceptability for roof work immediately before starting installation.
 - a. Examine steel decks to ensure that panels are properly secured to structural members and to each other and that surfaces of top flanges are flat or slightly convex.
 - b. Responsible party shall correct defects and inaccuracies in roof deck surface to eliminate poor drainage and hollow or low spots and perform the following.
 - 1) Install wood nailers the same thickness as insulation at eaves, edges, curbs, walls and roof openings for securing cant strips, edge metals, gutters and flashing flanges.
 6. Ensure all voids, gaps and openings are filled/covered to ensure no adhesive/bitumen drippage.
 7. Steel Decks:
 - a. Cover steel decks with a layer of insulation board of specified thickness to span the width of a deck rib opening and conforming to fire safety requirements.
 - b. Secure with piercing or self-drilling, self-tapping fasteners of quantity and placement conforming to fire safety requirements.
 - c. Secure with piercing or self-drilling, self-tapping fasteners of quantity and placement conforming to FM P7825.
 - d. Insulation joints parallel to ribs of deck shall occur on solid bearing surfaces only, not over open ribs.

- e. Apply insulation in layers required with staggered joints.
- f. Lay insulation so that continuous longitudinal joints are perpendicular to direction of roofing, as specified in this section, and end joints of each course are staggered with those of adjoining courses.
- g. When using multiple layers of insulation, joints of each succeeding layer shall be parallel and offset in both directions with respect to layer below.
- h. Keep insulation 1/2 inch clear of vertical surfaces penetrating and projecting from roof surface.
- i. Not less than 20 pounds of asphalt per 100 square feet of roof deck shall be used for mopping each layer of insulation in place.
- j. Firmly embed each layer of insulation in continuous moppings of hot asphalt or approved adhesive.
 - 1) Walk boards in to ensure complete and proper adhesion.
 - 2) Fill all voids in excess of 1/4 inch with insulation.

B. Ensure that the following conditions exist prior to application of the roofing materials:

- 1. Drains, curbs, cants, perimeter walls, roof penetrating components and equipment supports are in place.
- 2. Surfaces are rigid, dry, smooth and free from cracks, holes and sharp changes in elevation. Joints in the substrate are sealed to prevent dripping of bitumen and odor/fumes into building or down exterior walls.
- 3. The plane of the substrate does not vary more than 1/4 inch within an area 10 feet by 10 feet when checked with a 10-foot straight edge placed anywhere on the substrate.
- 4. Substrate is sloped as indicated and tapered insulation included to provide the required finished slope.
- 5. Walls and vertical surfaces are constructed to receive counterflashing and will permit nailing of the base flashing materials.
- 6. Treated wood nailers are fastened in place as required and indicated for securing of felts, edging strips, gravel stops and roof fixtures. Surface-applied nailers are the same thickness as the roof insulation.
 - a. NOTE: Use wood cant at non-supported flashing and wood blocking details (expansion joints, area dividers and wall/roof intersections where roof deck is not supported by wall).

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7. Cants:
 - a. Cants are securely fastened in place in the angles formed by walls and other vertical surfaces.
 - b. The angle of the cant is 45 degrees and the height of the vertical leg is not less than nominal 4 inches.
 - c. Cants are constructed of treated wood as shown on drawings. Exception is at pre-fabricated curbs such as roof scuttles, exhaust fans, etc.
8. Insulation boards are installed smoothly and evenly, and are not broken, cracked or curled. Insulation is being roofed over on the same day the insulation is installed.
9. Apply self-adhering membrane underlayment where indicated prior to or in conjunction with roof membrane installation.

3.02 PREPARATION

- A. Coordinate the work with other trades to assure that components, which are to be secured to or stripped into the roofing system are available and that flashing and counterflashing are installed as the work progresses.
- B. Ensure continuity with air, vapor and/or moisture barriers of the other building envelope systems.
- C. Priming of Surfaces: Prime surfaces at the rate of 0.75 gallon per 100 square feet or as recommended by the modified bitumen sheet manufacturer's printed instructions and allow to dry.
 1. Priming of Concrete and Masonry Surfaces:
 - a. After surface dryness requirements have been met, coat concrete and masonry surfaces, which are to receive roof insulation and roofing materials uniformly with asphalt primer.
 - b. Allow the primer to dry prior to application of the insulation, roofing and flashing.
 2. Priming of Metal Surfaces:
 - a. Prime flanges of metal, prior to stripping into the roofing system in accordance with the modified bitumen manufacturer's printed instructions and allow to dry.

3.03 INSTALLATION

A. Insulation

1. All roof insulating materials shall be kept dry before, during and after installation.
2. Lay insulation so that continuous longitudinal joints are perpendicular to direction of roofing, as specified in the roof membrane section and end joints of each course are staggered with those of adjoining courses.
3. When using multiple layers of insulation, joints of each succeeding layer shall be parallel and offset in both directions with respect to layer below.
4. Keep insulation ½-inch clear of vertical surfaces penetrating and projecting from roof surface.
5. For mechanically fastened applications, ensure boards are fit, edges supported on the bearing surface and mechanically fastened in accordance with the Factory Mutual criteria.

B. Tapered Roof Insulation

1. A factory tapered system shall be provided to attain slopes as shown on Tapered Roof Plan(s).
2. Provide starter and filler blocks as required to provide the total thickness of insulation necessary to meet the specified slope and thermal conductance.
3. Mitered joints shall be factory fabricated and shall consist of two diagonally cut boards or one board shaped to provide the required slopes.
4. Identify each piece of tapered insulation board by color or other identity coding system, allowing the identification of different sizes of tapered insulation board required to complete the roof insulation system.
5. Four feet (4') x four feet (4') tapered insulation sumps required at all roof drain locations, unless noted otherwise.
6. At the drainage locations, ensure tapered insulation as noted/shown on details and Tapered Roof Plan(s). Do not provide tapered sump at overflow drains/outlets.
7. See specific notes on the Tapered Roof Plan(s).
8. Tapered Edge Strips
 - a. Where indicated, provide edge strips in the right angle formed by junction of roof and wood nailing strips that extend above level of roof.
 - b. Install edge strips flush against vertical surfaces of wood nailing strips.
 - c. Where possible, nail edge strips to adjoining surfaces.

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- d. Where tapered edge strips are installed against non-nailable materials, install in heavy mopping of asphalt or set in a heavy coating of asphalt roof cement, or an approved adhesive.
- e. Provide tapered edge strips at start of crickets where start thicknesses is greater than 1/4".

3.04 APPLICATION

- A. Apply roofing materials as specified herein, unless specified or recommended otherwise by the manufacturer's printed application instructions.
 - 1. Keep roofing materials dry before and during application.
 - 2. Unroll modified bitumen membrane sheets and allow to relax minimum of 30 minutes prior to installing sheets.
 - 3. Do not permit phased construction of membrane system unless blisters will be covered under warranties. All plies of the membrane shall be applied the same work day unless otherwise approved.
 - a. Roof contractor shall ensure bleed-out at all membrane seams.
 - 1) First ply of base flashing shall be installed daily with temporary seals (mastic/cement) along top edge and fastened to prevent slippage.
 - 2) Base sheet assembly may not be left exposed to inclement weather being forecast.
 - b. Roof contractor shall thoroughly inspect the one-ply base sheet assembly, make repairs and ensure all dirt, debris, moisture and other undesired containments are removed before installing the cap sheet.
 - c. Exposure to inclement weather forecasted or not forecasted may be grounds for rejection.
 - 4. Complete application of roofing in a continuous operation. Begin and apply only as much roofing in one day as can be completed the same day.
 - 5. Apply 1 ply of membrane base sheet in shingle fashion, watershedding with a 34 inch exposure.
 - 6. Adhere the specified temperature restrictions for the asphalt and adhesives.
 - 7. Stagger all insulation at tie-offs at end of each day's work. Seal terminations and deck flutes to prevent moisture entry.
 - 8. Provide temporary roofing and flashing as specified herein prior to the application of the permanent roofing system.

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B. Temporary Roofing and Flashing:

1. Provide temporary roofing and flashing where considerable work by other trades, such as installing antennas, pipes, ducts, is to be performed on the roof or where construction scheduling or weather conditions require protection of the building's interior before the permanent roofing system can be installed.
2. Cover all curbs fully and make watertight until equipment is installed.
3. Do not install temporary roofing over permanently installed insulation.
4. Provide rigid pads for traffic over the temporary roofing.

C. Modified Bitumen Sheets (Base Sheet and Cap Sheet):

1. One-ply base sheet shall be fully adhered in hot asphalt or approved adhesive.
2. Prior to installation of cap sheet, inspect and repair base sheet assembly including adding cut base sheet at areas of ponding water.
3. Cap sheet shall be installed with cold adhesive in accordance with manufacturer's printed literature.
4. Sheets shall be watertight and visually free of pinholes, particles of foreign matter, un-dispersed raw material or other manufacturing defects that might affect serviceability.
5. Edges of the seams shall be straight and flat so that they may be seamed to one another without forming fish mouths, wrinkles or other voids.
6. Provide tight smooth laminations of each membrane layer without wrinkles, ridges, buckles, kinks, fishmouths, or voids.
7. Stagger end laps a minimum of 36 inches from preceding courses.
8. Offset cap ply from base sheet assembly head laps.
9. Completed roof membrane construction shall be free of air pockets, blisters, ridges, fishmouths, visible asphalt bleed out, or open seams. Apply granules into bleed out of asphalt or adhesive at edges.
10. Hot air weld all laps of cap sheet with hot air welder modified for use with modified bitumen roof membrane.
11. Contractor shall repair voids daily.

D. Flashing:

1. Install base ply base flashing in hot asphalt or approved adhesive.

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2. Install cap ply base flashing in manufacturer's cold adhesive. Hot air weld all laps with hand held hot air welder and roller.
 3. Apply modified bitumen sheet flashing in the angles formed where the roof deck abuts walls, curbs, ventilators, pipes and other vertical surfaces, in accordance with the membrane manufacturer's printed application instructions and where necessary to make the work watertight.
 4. All penetrations (roof drains, vents, and pipes) shall be flashed with a target sheet square in size equal to roll width less selvage edge.
 5. Metal flashing collars and cap flashings are specified under Section 07 60 00, Sheet Metal. Do not set metal flashing in hot asphalt.
 6. Flashing at Roof Drain:
 - a. Flashing for roof drains are specified under Section 07 60 00, Sheet Metal.
 - b. Roof system shall be made watertight at roof drains daily.
 7. Provide three-course mastic and fabric at top edge the same day the flashings are installed.
 8. Voids in flashings shall be repaired to new condition to include replacement of flashing piece.
 9. Flashing shall extend 6" onto field of roof.
- E. Offset side laps of base flashing a minimum of 12 inches from field membrane head/side laps.
- F. Clean Up: Remove debris, scraps, containers and other rubbish and trash resulting from installation of the roofing system from job site each day.
- G. Protection of Applied Roofing Against Moisture Absorption: At the end of the days work and whenever is imminent, protect applied modified bitumen roofing system as follows.
1. Water Cut-offs:
 - a. The insulation line shall be straightened using loose-laid cut insulation sheets and the terminated edge of the modified bitumen roofing system shall be sealed with two full width strips of roofing felt set in and coated with asphalt roof cement.
 - b. One-half width of the strips shall extend up and over the finished roofing and the other half-width extended out onto the bare deck unless recommended otherwise in the membrane manufacturer's printed application instructions.

- c. Membrane shall be pulled free or cut to expose the insulation when resuming work and the insulation sheets used for fill-in shall be removed.
 - d. Seal voids and gaps in decks to prevent moisture entry under installed roofing.
2. Broadcast granules into bitumen/adhesive bleed-out or field apply manufacturer's coating over bleed out
 3. Temporary Flashing for Permanent Roofing:
 - a. Provide temporary flashing at drain curbs, walls and other penetrations and terminations of roofing felts until the roofing membrane is complete and the permanent flashings are applied.
 - b. Temporary flashings shall consist of one ply of ply felt applied in a trowel coat of asphalt roof cement applied to a primed surface and finished with a surface coat of asphalt roof cement.
 - c. Remove temporary flashing before applying permanent flashing.
 4. Temporary Walkways, Runways and Platforms:
 - a. Do not permit storing, walking, wheeling and trucking directly on applied roofing materials.
 - b. Provide temporary walkways, runways and platforms of smooth clean boards or planks or plywood over loose laid membrane or protection sheet as necessary to avoid damage to applied roofing materials and to distribute weight to conform to indicated live load limits of roof construction.
 - c. Use clean rubber-tired equipment for roofing work.

3.05 FIELD QUALITY CONTROL

- A. Perform field test in the presence of the Owner's representative. Notify the Consultant/ Engineer seventy-two (72) hours before performing tests.
- B. Roof Drain Test: After the roofing system is complete, but prior to Owner acceptance of the roofing, perform the following test of roof drains and adjacent roofing for water tightness.
 1. Plug roof drains and fill with water for 24 hours. To ensure some drainage from the roof, do not test all drains at the same time.
 2. Measure water at the beginning and at the end of the 24-hour period.
 3. If precipitation occurs during the test period, repeat the test.

4. If the water level falls, remove water, thoroughly dry and inspect the installation and repair or replace roofing at the drain.
 5. Repeat the test until there is no water leakage.
 6. Completed roof membrane system including insulation shall be free of voids, defects and moisture. Repairs shall be performed by Contractor on a daily basis.
- C. Protect roof system from moisture intrusion and other forms of damage during course of construction project. Replacement of moisture/damage to new is required.
 - D. Repair or remove deficiencies/voids (air pockets, wrinkles, fishmouths, tears, cuts, abrasions, contamination, standing/ponding water areas, etc.) daily.
 - E. Project shall be free of moisture/damage and deficiencies/voids.

3.06 MANUFACTURER'S FIELD INSPECTION

- A. Manufacturer's technical representative shall visit the site as necessary during the installation process to ensure roofing system, flashings, and other components are being installed in a satisfactory manner for warranty requirements.
 1. Owner shall be notified in writing three (3) days prior to the site visit.
- B. Manufacturer's technical representative shall perform a field inspection of the installation at substantial completion and prior to issuance of warranty.
- C. Within three (3) days, after each site visit, a report, signed by the manufacturer's technical representative, shall be submitted to the Consultant/Engineer noting the overall quality of work, deficiencies and any other concerns, and recommended corrective actions in detail.
- D. Notify Consultant/Engineer a minimum of three (3) working days prior to site visit by manufacturer's technical representative.

3.07 INFORMATION CARD(S)

- A. Install a photoengraved or etched aluminum information card (for exterior display) at location to be determined by Consultant/Engineer. Information listed on the Information Card is located at the end of this section
- B. A card shall be provided for each differing assembly and be a minimum size of 8-1/2 by 11 inches.
- C. Secure with removable stainless steel screws at approved location.
- D. A hard copy of each card is required in the Close-Out Documents.

END OF SECTION 07 55 27

Roof Replacement Modified Bitumen Sheet Roofing System (With Insulation)

07 55 27 - 21

19065

ROOF REPLACEMENT MODIFIED BITUMEN SHEET ROOFING SYSTEM (INSULATION)
INFORMATION CARD

1. Contract Number: _____
 2. Building Number and Location: _____
 3. Project Specification Number: _____
 4. Deck:
 - a. Type: _____
 - b. Slope: _____
 5. Insulation:
 - a. Type: _____
 - b. Thickness: _____
 - c. Manufacturer: _____
 6. Overlay or Coverboard
 - a. Type: _____
 - b. Thickness: _____
 - a. Size: _____
 - b. Manufacturer: _____
 7. Vapor Retarder: Yes No Type: _____
 8. Base Sheet Application:
 - a. Type: _____
 - b. Weight: _____
 - c. Method: (torched / mopped / hand / or machine-nailed)
 - d. Manufacturer (Name / Address / Phone No.): _____

 9. Cap Sheet Application:
 - a. Type: _____
 - b. Weight: _____
 - c. Method: (torched / mopped / hand / or machine-nailed)
 - d. Manufacturer (Name / Address / Phone No.): _____

 10. Adhesive:
 - a. Type: _____
 - b. Quantity/Square: _____
 - c. Manufacturer: _____
 11. Flashing Sheets:
 - a. Type: _____
 - b. Weight or Gauge: _____
 - c. Manufacturer: _____
 12. Statement of Compliance or Exceptions: _____

 13. Date Roof Completed: _____
 12. Warranty Period: _____
 14. Roofing Contractor (Name / Address / Phone No.): _____

 15. Prime Contractor (Name / Address / Phone No.): _____

- Contractor's Signature: _____ Date: _____

SECTION 07 60 00

SHEET METAL

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes all sheet metal items and accessories specified or as required to complete the work. Applicable edge metal systems shall adhere to the requirements of ANSI/SPRI/FM 4435/ES-1 as defined in Chapter 15, 1504.5, Edge Securement for Low-Sloped Roofs.
- B. All treated / waterproof carpentry shall have waterproof underlayment to provide separation with sheet metal.
- C. New clamping rings, stainless steel bolts and metal strainers are required on all roof drains.
- D. A set quantity is required as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. This quantity is to be included in the Base Bid as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- H. Section 07 73 15: Roof Drain Repairs/Modifications
- I. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.

B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

1. ANSI/SPRI/FM 4435/ES-1 (2017) Test Standard for Edge Systems Used with Low Slope Roofing Systems
2. ANSI/ASME A112.6.4 (2008) Roof, Deck and Balcony Drains

C. ASTM INTERNATIONAL (ASTM):

1. ASTM A 167 (2004) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
2. ASTM A 48 / A 48 M (2016) Standard Specification for Gray Iron Castings
3. ASTM A 653/A 653M (2010) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
4. ASTM A 792 / A 792 M (2015) Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process
5. ASTM A 924 / A 924M (2006) Steel Sheet, Metallic-Coated by the Hot-Dip Process
6. ASTM B 209 (2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
7. ASTM B 32 (2014) Solder Metal
8. ASTM B 370 (2012) Copper Sheet and Strip for Building Construction
9. ASTM B 69 (2005) Rolled Zinc
10. ASTM D 1970 / D 1970 M (2018) Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
11. ASTM D 41 / D 41 M (2016) Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
12. ASTM D 4586 / D 4586 M (2018) Standard Specification for Asphalt Roof Cement, Asbestos-Free
13. ASTM D 4601 / D 4601 M (2012) Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
14. ASTM D 4637 (2004) EPDM Sheet Used in Single-Ply Roof Membrane

D. FACTORY MUTUAL (FM):

1. FM DS 1-49 (Latest Edition) Perimeter Flashing

- E. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2015) International Building Code
 - 2. IEBC (2015) International Existing Building Code
- F. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA):
 - 1. NRCA Roofing and Waterproofing Manual, Fifth Edition.
 - 2. The NRCA Architectural Sheet Metal and Metal Roofing Manual, 2006 Edition.
- G. SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA):
 - 1. Architectural Sheet Metal Inspection Guide, Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), 2004.
 - 2. Architectural Sheet Metal Manual 7th Edition, Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), 2012.
 - 3. Architectural Sheet Metal Quality Assurance Guide, Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA), 2015.

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Drawings:
 - 1. Details shall be in strict accordance with the drawings provided.
 - 2. All details are based on the guidelines of the NRCA Construction Details, Fifth Edition, and SMACNA Architectural Sheet Metal Manual, Seventh Edition.
 - 3. Contractor shall provide shop drawings with the following information for all new sheet metal flashings and components:
 - a. Type and gage of metal, configuration, dimensions, fastening and anchoring methods to include type fastener and frequency of attachment, provisions for expansion and contraction flashing closures and trim.

- b. Any deviation/variation requested due to manufacturers requirements must be submitted in writing for approval.
- c. Any items of concern should be brought up at the Pre-Construction Conference.

D. Samples:

- 1. One sample of each type of material/sheet metal configuration to be used on this project shall be provided at the Pre-Construction Conference.

E. Color Samples of Kynar 500 (Hylar 5000) finishes from manufacturer standard color selections. A minimum of twelve (12) color selections shall be provided. Color samples shall reasonably match existing materials to be replaced.

F. Drains and Accessories

- 1. Existing Drains

- a. New Clamping rings, stainless steel bolts and metal strainers.

G. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 20 05, Safety Requirements.

1.05 CONFORMANCE AND COMPATIBILITY

A. The contractor shall ensure all materials provided are compatible with the other components of the system, are acceptable for the specified use, and meet the requirements of the specifications.

B. Coordinate sheet metal and attachment with wood treatment of rough carpentry in accordance with Section 06 10 00, Rough Carpentry.

1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery:

- 1. Package and protect materials during shipment.
- 2. Materials shall be delivered to the site in an undamaged condition, and in a timely order for incorporation in the work.

B. Storage:

- 1. Do not store more materials on the roof than can be installed the same day and remove unused materials at the end of each day.

2. Materials shall be stored, handled, and installed in a manner to protect them from all damage during the entire construction period.
3. Immediately remove damaged materials from the job site and replace with new material.

C. Handling:

1. Materials shall not be laid on newly installed roof or in areas prone to blow or fall off the roof.

1.07 DIFFERING SITE CONDITIONS

- A. The contractor will notify the Consultant/Engineer immediately of any unforeseen site condition.
- B. The contractor will be required to secure the areas and dry-in the roofing system at no cost to the Owner until the problem is resolved.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Shall conform to the respective reference specifications and other requirements specified herein.
- B. Edge metal systems shall adhere to the requirements of the latest edition of ANSI/SPRI/FM 4435/ES-1 as defined in Chapter 15, 1504.5, Edge Securement of Low-Sloped Roofs.
- C. Sheet Metal:
 1. Furnish sheet metal items in 8 to 10 foot lengths.
 2. Vertical face of sheet metal components shall be a minimum of 4 inches, a maximum of 8 inches and extend over the wall surfaces by a minimum of 12 inches unless otherwise indicated or approved.
 3. Single pieces less than 8 feet may be used to connect shop fabricated inside and outside corners and at end runs.
 4. Provide accessories and other items essential to complete the sheet metal installation.
 - a. These accessories shall be made of the same material as the items to which they are applied.

5. Fabricate sheet metal items of the materials specified and to the gage, thickness, or weight as specified, unless required by SMACNA to be heavier gage or size.
6. Finish:
 - a. Provide Kynar 500 (Hylar 5000) finish for all exposed sheet metal items unless otherwise indicated. Color shall be as selected by Owner.
7. Exterior vertical face of sheet metal components shall extend a minimum of 1 1/2-inch below blocking.

2.02 TYPES AND GAGES OF METALS

- A. Steel Sheet, Galvalume AZ50, gage as specified for specific components below:
 1. 24 gage (counterflashings, edge metals, wall panels, and copings for parapet walls up to 18" wide)
 2. 22 gage (copings for parapet walls up to 24" wide)
- B. Aluminum Sheet ASTM B 209, thickness as specified for specific components below:
 1. 0.040 inches (counterflashings, edge metals, walls panels, and copings for parapet walls up to 18" wide)
- C. Lead (for boots / drains):
 1. Grade B, minimum weight 4 lbs per square foot.
- D. Stainless Steel (for pitchpans / penetrations):
 1. ASTM A 167, Series 302 or 304, 22 gage and soldered.
- E. Cleats:
 1. 1 gage/thickness heavier than metal attached; 22 gage maximum for galvalume cleats, 0.050 inches maximum for aluminum cleats.
- F. Use the same metal or a metal compatible with the item fastened when connecting to existing metal.

2.03 OTHER MATERIALS

- A. Asphalt Roof Cement: ASTM D 4586 / D 4586 M, Type II.
- B. Asphalt Primer: ASTM D 41 / D 41 M.

C. Fasteners:

1. Fasteners shall be compatible with the materials being fastened and shall provide for secure, firm attachment.
2. Exposed fasteners shall have domed head with integral metal washer and rubber gasket.
3. Fasteners shall be hot dipped galvanized steel, stainless steel, bronze or copper as a minimum.
4. Only stainless steel fasteners shall be used to connect dissimilar metals.

D. Membrane Liner and Waterproof Underlayment:

1. Smooth surfaced modified bitumen meeting ASTM D 1970 / D 1970 M for waterproof underlayment is required.
2. Ensure product is compatible with roof membrane and membrane adhesives.

E. Butyl Tape:

1. Double-sided butyl tape of width as required.

F. Aluminum Termination Bar:

1. One (1) inch x 1/8 inch thick with slotted holes a minimum of 6 inches on center.

G. Existing Drains:

1. Provide stainless steel bolts, cast iron clamping ring and metal strainer at all drains.
2. Strainer configuration shall be compatible with and lock to existing drain.
3. ASTM A48, Class 25 and ANSI/ASME A112.6.4, Roof, Deck and Balcony Drains, and paint coated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Hot stacks and other hot penetrations shall not have any roofing materials including rough carpentry and other flammable materials are come in direct contact with them. These conditions should only have sheet metal counterflashings and non-flammable materials and sealants for the counterflashing.

B. Requirements:

1. Provide new metal for all work unless otherwise indicated.
2. Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry and free of defects and projections, which might affect application.
3. For installation of items or criteria not provided, refer to NRCA Construction Details, Fifth Edition and SMACNA Architectural Sheet Metal Manual, Seventh Edition.
4. Provide sheet metal flashing in angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight.
5. Join sheet metal together as indicated.
6. Increase attachment of all components by 100% at corner locations as defined by ASCE-7.
7. All materials indicated to be reused shall be removed without damage and stored for protection until required.
8. Where existing components to be reused do not provide for minimum 4 inch vertical flashing face, install flashing skirt of compatible materials and attach securely in a watertight and water shedding manner.
9. Provide pre-fabricated inside and outside corners at all sheet metal intersection pieces.
10. Sheet metal shall be fabricated to conform to the contours of surfaces to which applied.
11. All sheet metal to have waterproof membrane underlayment installed behind or below the metal components. Waterproof underlayment shall have minimum 4 inch laps and sealed at all terminations and penetrations.
12. Provide conforming sheet metal closures at all flashing termination conditions.
13. Provide accessories and fastenings as required to provide a securely attached, watertight construction.
14. Where sheet metal components are to be embedded in the roofing system, prime both sides of all metal flanges prior to installation.

C. Workmanship:

1. Make lines, arises and angles sharp and true.

2. Free exposed surfaces from visible wave, warp and buckle and tool marks.
3. Fold back exposed edges neatly to form a 1/2-inch hem on concealed side.
4. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

D. Nailing:

1. Confine nailing of sheet metal generally to sheet metal only where noted or specified.
2. Confine nailing of flashing to one edge only.
3. Space nails 4 inches on center and staggered or as otherwise indicated.
4. Face nailing will not be permitted.
5. Nailers are specified in Section 06 10 00, Rough Carpentry.

E. Continuous Cleats:

1. Provide continuous cleats where indicated or specified.
2. Cleats shall be of the same material as material being attached and one gage/increment thicker.
3. Form with integral drip to engage sheet metal to be attached.
4. Attach securely at maximum 6 inches on center, increased to 3 inches on center at corners as defined by ASCE-7.
5. Kick out shall receive 3/4 inch wide lock.

F. Attachment Clips (Wind Cleats)

1. Space clips for counterflashing and raised metal edges evenly not over 24 inches on center and 12 inches on center at corners.
2. Clips shall be not less than 2 inches wide and 6 inches long and of the same metal and 1 gage thicker as the sheet metal being installed.
3. Secure one end of the clip with two fasteners and the cleat folded back over the heads.
4. Lock the bottom end onto the newly installed counterflashing a minimum of 1/2 inch.

G. Rivets and Screws:

1. Install were indicated or required.

2. Provide compatible fasteners and washers where required to protect surface of sheet metal and to provide a watertight connection.
3. Rivets shall be one inch on center unless noted otherwise. Rivets shall be sealed with compatible sealant and match sheet metal finish.

H. Seams:

1. Standing Seams:
 - a. Not less than 1 inch high, single-lock with sealant.
 - b. Coped side lap with two beads of butyl sealant for coping and cap flashing sheet metal.
 - c. Coping: As indicated on the drawings.
2. Drive Cleat:
 - a. Minimum 1 1/2-inches wide.

I. Protection from Dissimilar Metals:

1. Paint with heavy-bodied bituminous paint or apply butyl tape, surfaces in contact with dissimilar metal, or separate the surfaces by means of waterproof underlayment as approved by Consultant/Engineer.
2. Any wood, nailers or other rough carpentry using Copper Azole (CA), Alkaline Copper Quaternary (ACQ) or Micronized Copper Quaternary (MCQ) treatment will require verification of the following:
 - a. Separation of metal roof, metal wall and sheet metal from the roof carpentry is required using waterproof underlayment as a minimum.
 - b. Type of fasteners acceptable for attachment into these woods (such as stainless steel).
 - 1) Fasteners for wood to wood connectors.
 - 2) Fasteners thru metal into wood.

J. Expansion and Contraction:

1. Provide expansion and contraction joints at not more than 40 foot intervals for metal.
2. Where the distance between the last expansion joint and the end of the continuous run is more than half the required interval, an additional joint shall be required.
3. Space joints evenly.

3.02 SPECIFIC COMPONENTS

A. Counterflashing and Skirts:

1. Metal work shall adhere to details shown.
2. All inside and outside corners and termination pieces shall be shop fabricated.
3. Cleats and locking clips to be one gage/increment thicker than metal being attached.

B. Copings:

1. Provide sheet metal coping as indicated and with termination closure flashing.
2. Edge metals/closures/copings shall have waterproof underlayment installed under coping and turned down minimum 3 inches each side of wall, and extend over wall assembly a minimum of 1 1/2 inches.
3. Coping shall have continuous firm support using non hygroscopic materials sloped to promote positive drainage.
4. Continuous cleats, one gage/increment thicker than metal coping, shall be installed on interior and exterior sides.
5. Sheet metal coping shall be attached with continuous cleats on outer face and screw fastening at maximum 12 inches on center on inner face, unless otherwise indicated or approved.
6. Joints methods shall be as indicated on drawings.
7. All inside and outside corners shall be pre-fabricated with 12-inch legs in each direction measured from inside corner.

C. Roof Drain Flashing:

1. "No Hub" connectors are not permitted unless specifically noted. Contractor is required to re-seal new drain assembly using lead method for cast iron drain pipes.
2. Temporarily plug drain when working in drain area. Remove debris from drain area prior to unplugging.
 - a. Remove plug from drain at the end of each day's construction or when inclement weather threatens.
3. Provide primed 30 inch metal sheet flashing indicated.

4. Ensure insulation tapers up from drain to a minimum 24 inches out at a minimum 1/4"/12" and a maximum of 1"/12". Provide tapered filler to match field insulation thicknesses.
5. Coat primed drain bowl flange with mastic/sealant.
6. Run roof membrane over drain bowl flange.
7. Set primed lead flashing sheet centered over roof drain in mastic/sealant over membrane plies.
8. Strip in metal flashing sheet with membrane flashing system as indicated.
9. Clamp the roof membrane, metal flashing sheet and strip flashing under the drain clamping ring.
10. Secure clamping ring so that membrane and flashing are free of wrinkles and folds.
11. Clean drain line at completion of work.
12. Flood test each drain to ensure watertight condition. If they fail, repair and retest.

D. Closure Conditions:

1. Provide prefabricated sheet metal closures at all flashing terminations to ensure a watertight condition.
2. A minimum three inches of coverage between/over the components shall be provided.
3. Metal copings shall have waterproof underlayment installed under coping and turned down minimum 3 inches each side of wall, and extend over wall assembly a minimum of 1 1/2-inch.
4. Metal counterflashings shall provide a minimum of 3" coverage over component being flashed.

3.03 BASE FLASHING SECUREMENT

- A. Where a nailable substrate does not exist for the securement of the base flashing, provide a 24 gage, galvalume sheet metal securement strip to the wall at all base flashing locations.

3.04 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.
- D. Locate quantities and show their locations on the applicable drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 07 60 00

SECTION 07 73 15

ROOF DRAIN REPAIRS/MODIFICATIONS ALTERNATE NUMBER 3

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes the repairs and modifications to the primary and secondary roof drain assemblies including the components and accessories.
 - 1. Remove the existing “no hub” connector and replace with new heavy duty “no hub” connector at identified drain locations shown on drawings.
 - 2. Visually inspect all other joints, connections, and transitions, as well as pipe hangers, supports, and attachments.
 - 3. Provide access to consultant/engineer for brief visual inspection at each location.
- B. These repairs and modifications shall be completed in accordance with the Contract Documents and any clarifications shall adhere to the below standards.
 - 1. ICC International Plumbing Code (IPC) 2015
- C. In addition to the drains indicated on the drawings, two additional drains shall be included in the Base Bid. This quantity is to be included in the Base Bid as listed in Section 01 20 00, Abbreviated Scope of Work, Quantities. Any quantity above or below the set quantity amount shall result in an add or deduct to the Contract Sum based on the unit price provided.

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- H. Section 07 60 00: Sheet Metal
- I. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.02 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI/ASME A112.6.4 (2008) Roof, Deck and Balcony Drains
- C. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM A48/A48M (2012) Standard Specification for Gray Iron Castings
 - 2. ASTM C 564 (2014) Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings
 - 3. ASTM C1173 (2014) Standard Specification for Flexible Transition Couplings for Underground Piping Systems
 - 4. ASTM C 1277 (2015) Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings
- D. CAST IRON SOIL PIPE INSTITUTE (CISPI):
 - 1. CISPI 310 (2012) Standard Specification for hubless cast iron soil pipe and fittings for sanitary and storm drain, waste, and vent piping applications.
- E. FACTORY MUTUAL (FM):
 - 1. FM CN 1680 (1989) Couplings Used in Hubless Cast Iron Systems for Drain, Waste or Vent, Sewer, Rainwater or Storm Drain Systems Above and Below Ground, Industrial/Commercial and Residential
- F. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2012) International Building Code
 - 2. IEBC (2012) International Existing Building Code
- G. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA):
 - 1. NRCA Roofing and Waterproofing Manual, Fifth Edition.

1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.

- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Product Data:
 - 1. Submit manufacturer's product data, including standard details and installation instructions.
- D. Manufacturer's Certification:
 - 1. Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- E. Drawings:
 - 1. Criteria shall be in strict accordance with the drawings provided.
 - 2. Contractor shall provide shop drawings with the following information for all new connections, seals, hangers, and components:
 - a. Type and gage of metal, configuration, dimensions, fastening and anchoring methods to include type and frequency of attachment, provisions for expansion and contraction flashing closures and trim.
 - b. Any deviation/variation requested due to manufacturer's requirements must be submitted in writing for approval.
 - c. Any items of concern should be brought up at the Pre-Construction Conference.
- F. Samples:
 - 1. One sample of each type of material/sheet metal configuration to be used on this project shall be provided at the Pre-Construction Conference.
- G. Drains and Accessories
 - 1. Existing Drains
 - a. New Clamping rings, stainless steel bolts and metal strainers.
 - b. No hub connectors.
- H. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan.

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged, for past 5 years, in manufacture of roof drains of similar type to that specified.

B. Installer's Qualifications:

1. Installer regularly engaged, for past 5 years, in installation of roof drains/connections of similar type to that specified.
2. Employ persons trained for installation of roof drains, drain piping, and connections.
3. Licensed by the LLR for plumbing.

1.05 CONFORMANCE AND COMPATIBILITY

- A. The contractor shall ensure all materials provided are compatible with the other components of the system, are acceptable for the specified use, and meet the requirements of the specifications.

1.06 DELIVERY, HANDLING AND STORAGE

A. Delivery:

1. Package and protect materials during shipment.
2. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage and Handling Requirements:

1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
3. Store materials in clean, dry area indoors.
4. Protect materials and finish during storage, handling, and installation to prevent damage.

1.07 DIFFERING SITE CONDITIONS

- A. The contractor will notify the Consultant/Engineer immediately of any unforeseen site condition.
- B. The contractor will be required to secure the areas and dry-in the facility at no cost to the Owner until the problem is resolved.

1.08 WARRANTY

- A. Contractor guarantee and warranty shall be exclusive and independent of each other. Each shall be issued directly to the Owner and dated as noted below.

- B. Furnish the Three-Year Contractor Warranty as provided in Section 01 20 45, Three-Year Contractor Warranty. The warranty period shall be not less than 3 years from the date of substantial completion.
 - 1. If the Contractor fails to perform repairs within 72 hours of written notification, the warranty will not be voided because of work being performed by others to repair deficiencies/failures regardless of manufacturer's warranty to the contrary.
- C. Manufacturer's Warranty:
 - 1. Ensure in writing any contractor or manufacturer's existing warranty remains unchanged by the repairs.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Shall conform to the respective reference specifications and other requirements specified herein.
- B. All no hub accessories shall be stainless steel.
 - 1. Fasteners/bolts
 - 2. Clamping rings
 - 3. Sleeves, Etc.
- C. All insert drain accessories shall be stainless steel or aluminum unless otherwise approved.

2.02 COMPONENTS

- A. Drain assemblies shall match existing manufacturer and be of equal or better quality.
- B. No Hub Connectors
 - 1. Fernco, heavy duty, stainless steel.
 - 2. Mifab, heavy duty, stainless steel.
 - 3. Mission, heavy duty, stainless steel.
- C. Insert Drains
 - 1. Olympic
 - 2. Marathon
 - 3. Zurn

2.03 EXISTING DRAINS

- A. Provide stainless steel bolts, cast iron clamping ring and metal strainer at all drains.
- B. Strainer configuration shall be compatible with and lock to existing drain.
- C. ASTM A48, Class 25 and ANSI/ASME A112.6.4, Roof, Deck and Balcony Drains, and paint coated.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine roof areas to receive roof drains.
- B. Verify roof deck is properly supported to receive roof drains.
- C. Notify Consultant/Engineer of conditions that would adversely affect installation or subsequent use.
- D. Do not begin installation until unacceptable conditions are corrected.

3.02 NO HUB CONNECTORS

- A. Remove existing no hub connectors, and clean and prepare pipes to receive new heavy duty no hub connectors.
- B. Adhere to manufacturer's printed installation requirements.

3.03 INSTALLATION OF ROOF DRAINS

- A. Install primary roof drains in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install primary and secondary (or overflow) roof drains plumb, level, and to correct elevation.
- C. Install primary and secondary (or overflow) roof drains using manufacturer's supplied components and hardware.
- D. Final Inspection: Inspect primary and secondary (or overflow) roof drains at time of Substantial Completion to verify drains remain unobstructed.

3.04 VISUAL REVIEW OF PIPES AND PIPE SUPPORTS

- A. Visually inspect all other joints, connections, and transitions, as well as pipe hangers, supports, and attachments directly under each drain location as shown on drawings.

3.05 FLOOD TESTING

- A. Clean out debris and other materials from inside drain of pipe.
- B. Use inflated plumber's bubble, set inside pipe beyond the pipe to bowl connection.
- C. Inflate bubble with an inline air pump and verify positive seal.
- D. Using 5 gallon bucket or other source, fill drain bowl up to, but not encroaching on the drain bowl, to clamping ring connection.
- E. Visually confirm no leaks from underside (flood test 2-4 hours).
- F. After confirmation of no leaks, fill remainder of drain bowl assembly out onto roof to test the clamping ring to drain bowl connection (flood test for 12-24 hours). Confirm no leaks.
- G. If leaks occur, repair or modify and retest.

3.06 PROTECTION

- A. Protect installed standard primary roof drains to ensure that, except for normal weathering, drains will be without damage or deterioration at time of Substantial Completion.
- B. Do not allow construction debris from entering drainage system through installed roof drains.

3.07 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.
- D. Locate quantities and show their locations on the applicable drawings.
- E. Provide actual used quantities on each Application for Payment request.

END OF SECTION 07 73 15

SECTION 07 92 00

SEALANTS FOR ROOFING AND SHEET METAL

PART 1 - GENERAL

1.01 SUMMARY

- A. Work in this section includes all sealant work required for this project specific to the roofing, sheet metal and adjoining surfaces.
 - 1. Roofing and Sheet Metal
 - 2. Adjacent Surfaces

1.02 RELATED DOCUMENTS

- A. The drawings and the provisions of the Instructions to Bidders, General Conditions, and Supplementary Conditions of these specifications shall govern work under this Section.
- B. Section 01 20 00: Abbreviated Scope of Work
- C. Section 02 04 00: Cutting and Patching
- D. Section 02 05 00: Demolition and Removal
- E. Section 05 31 23: Metal Roof Deck Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- H. Section 07 73 15: Roof Drain Repairs/Modifications
- I. Section 07 60 00: Sheet Metal

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced, and to provide any clarifications for issues not covered within this specification.
- B. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C 717 (2018) Standard Terminology of Building Seals and Sealants
 - 2. ASTM C 920 (2018) Elastomeric Joint Sealants
 - 3. ASTM C 1193 (2016) Standard Guide for Use of Joint Sealants
 - 4. ASTM C 1472 (2016) Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width

C. INTERNATIONAL CODE COUNCIL (ICC):

1. IBC (2015) International Building Code
2. IEBC (2015) International Existing Building Code

D. SEALANT WATERPROOFING RESTORATION INSTITUTE (SWRI):

1. Sealants: The Professional's Guide, 2013.

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 20 00, Abbreviated Scope of Work, Submittals.

B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.

C. Manufacturer's Catalog Data

1. Sealants/Tapes
2. Primers
3. Backstop materials
4. Data for the sealants shall include shelf life, recommended cleaning solvents, modulus and type cure.

D. Manufacturer's Standard Color Chart

1. Sealants:
 - a. Color to match sheet metal and adjoining surface.

E. Manufacturer's Instructions

1. Sealants/Tapes: Submit application instructions, precautions and mixing instructions for multi-component sealants.

F. Samples

1. Sealants: Submit one tube of each color for each sealant type to be used.

G. Sample Installations:

1. Finished Joint:
 - a. Before sealant work is started, submit a sample of each type of finished joint where directed.

- b. Sample shall show the workmanship, bond and color of sealant.
- c. The workmanship, bond and color of sealant throughout the project shall match the approved sample joints.

H. Certificates of Compliance

- 1. Sealants/Tapes
- 2. Primers
- 3. Bond breakers
- 4. Backstops
- 5. Submit certificates from the manufacturers attesting that materials meet the specified requirements and compatible for specified use.

- I. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 20 05, Safety Requirements.

1.05 ENVIRONMENTAL CONDITIONS

- A. The ambient temperature shall be within the limits of 40 and 100 degrees F when sealant is applied.

1.06 DELIVERY AND STORAGE

- A. Delivery:
 - 1. Deliver materials to the job site in unopened in manufacturers' external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon.
 - 2. Elastomeric sealant containers shall be labeled to identify type, class, grade and use.
 - 3. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 100 F degrees or less than 40 degrees F.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide sealant that has been tested and found suitable for the substrates to which it will be applied.

B. Exterior Sealant:

1. Provide a low to medium modulus silicone based or polyurethane based with a neutral cure.
2. ASTM C 920, grade NS. "Use" based on adjoining materials.
3. Type – A type S, single component, or type M, multi-component may be used.
4. Locations and Colors for Sealants
 - a. Colors will be selected from standard color charts after mock-ups for each condition field of at least 3 choices is provided.
5. Class
 - a. A Class 50 shall be provided unless specifically approved or noted otherwise.
6. Use
 - a. Sealant use for each condition or application shall adhere to use classification of ASTM C 920.
7. Locations
 - a. Joints between existing substrates/surfaces.
 - b. Tie-in of sheet metal to various wall types at terminations.
 - c. Metal reglets, where existing flashing extends into various types.
 - d. Metal to metal joints where sealant is indicated or specified.

C. Sealant Tapes for Sheet Metal Laps:

1. Provide a partially cured butyl tape, thickness 1/8 inch by a minimum of 1/2 inch wide.
2. Locations shall be as follows:
 - a. Lap joints of all metals.
 - b. Beneath cover plates of cap and counterflashings.
 - c. Where noted or specified elsewhere.

D. Hot Stacks / Penetrations

1. At these locations, sealant shall be UL listed and pass 4 hour, 4 inch fire and hose stream test using the required/compatible backer material.

2.02 PRIMER FOR SEALANT

- A. Provide a non-staining, quick drying type and consistency recommended by the sealant manufacturer for the particular application.

2.03 BOND BREAKERS

- A. Provide the type and consistency recommended by the sealant manufacturer for the particular application.

2.04 BACKSTOPS

- A. Provide glass fiber roving or neoprene, butyl, polyurethane or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer.
- B. Backstop material shall be compatible with sealant.
- C. Do not use absorptive materials.

2.05 CLEANING SOLVENTS

- A. Provide type recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

- A. Surfaces shall be clean, dry to the touch, and free from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion.
- B. When resealing an existing joint remove existing caulking/sealant prior to apply new sealant.
- C. Prepare surface in strict accordance with manufacturers printed instructions.

3.02 APPLICATION OF SEALANTS

- A. Joint Width to Depth Ratio:

- 1. Acceptable Ratios:

	<u>Joint Width</u>	
	Minimum	Maximum
Conc./	1/4"	1"
Masonry	1/4"	1"

B. Backstops:

1. Install backstops dry and free of tears or holes.
2. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified.
3. Install backstops in the following locations:
 - a. Where indicated.
 - b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width to Depth Ratios".

C. Primer:

1. Immediately prior to application of the sealant, clean out dust/dirt/loose particles from joints.
2. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry and metal surfaces in accordance with sealant manufacturer's instructions.
3. Do not apply primer to exposed finish surfaces.

D. Bond Breaker:

1. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for the type joint and sealant specified.
2. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

E. Sealants:

1. Provide a sealant compatible with the materials to which it is applied.
2. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the gun.
3. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width.
4. Force sealant into joints to fill the joints solidly without air pockets.
5. Tool sealant after application to ensure adhesion.
6. Sealant shall be uniformly smooth and free of wrinkles.
7. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant and tool smooth as specified.

3.03 APPLICATION OF BUTYL TAPES

- A. Surfaces shall be cleaned and prepared as noted below.
- B. No exposed applications of butyl tapes/sealants are permitted.
- C. At each lap, provide 2 continuous applications of tape approximately 1 inch apart within the lap.
- D. Directly after tapes are installed, set and secure metal.

3.04 PROTECTION AND CLEANING

- A. Protection:
 - 1. Protect areas adjacent to joints from sealant smears.
 - 2. Masking tapes may be used for this purpose, if removed 5 to 10 minutes after joint is filled.
- B. Final Cleaning:
 - 1. Masonry and Other Porous Surfaces:
 - a. Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer.
 - b. Allow excess sealant to cure for 24 hours then remove by wire brushing or sanding.
 - 2. Metal or Non-Porous Surfaces:
 - a. Remove excess sealant with a solvent-moistened cloth.

3.05 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 20 00, Abbreviated Scope of Work, Quantities, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or videotape documentation of repairs.
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END OF SECTION 07 92 00
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DRAWINGS

