



Repair/Replace Roofing Systems – Grand Strand Campus
Buildings 300, 500, and 1000

Myrtle Beach, South Carolina

Construction Documents

Prepared For:

Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

Owner Project Number: H59-6229-PD

BEE Project Number: 23010C

March 12, 2024



Repair/Replace Roofing Systems – Grand Strand Campus
Buildings 300, 500, and 1000

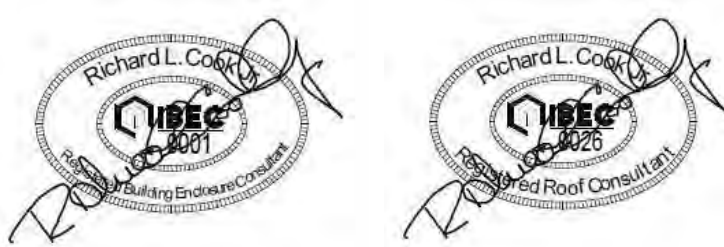
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Mr. Richard L. Cook, Jr.
FIIBEC, RBEC (RRC, RWC, REWC), RRO, REWO, CCS, CCA, CSRP & LEED® AP & CBECxP

The Building Envelope Enclosure Group

March 12, 2024

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PROJECT NUMBER: H59-6229-PD

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

AGENCY: HGTC - Horry-Georgetown Technical College

PROJECT NAME: Repair/Replace Roofing Systems - Grand Strand Campus

PROJECT NUMBER: H59-6229-PD CONSTRUCTION COST RANGE: \$800,000 to \$950,000

PROJECT LOCATION: Buildings, 300, 500, and 1000.

DESCRIPTION OF PROJECT/SERVICES: *(450 character limit)*

Base bid work includes complete removal of existing roof systems down to the structural deck for bldg. 300, areas F & G (20 squares) and bldg. 1000, areas B, B1, C, D, D1, D2, E1E4, F, G, H & I (360 squares). Roof replacement includes a two-ply modified bitumen roof system. Removal of minor, non-friable asbestos containing roof materials is included.

BID/SUBMITTAL DUE DATE: 05/07/2024 TIME: 10:00 AM NUMBER OF COPIES: 1

PROJECT DELIVERY METHOD: Design-Bid-Build

AGENCY PROJECT COORDINATOR: Kevin Brown

EMAIL: kevin.brown@hgtc.edu TELEPHONE: (843) 349-5354

DOCUMENTS OBTAINED FROM: https://hgtc.edu/procurement

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

PERFORMANCE AND LABOR & MATERIAL PAYMENT BONDS: The successful Contractor will be required to provide Performance and Labor and Material Payment Bonds, each in the amount of 100% of the Contract Price.

DOCUMENT DEPOSIT AMOUNT: \$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.

Agency **WILL NOT** accept Bids sent via email.

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

A/E NAME: The Building Envelope Enclosure Group (The BEE Group) A/E CONTACT: Amanda Matlock

EMAIL: amandam@thebeegroup.org TELEPHONE: (843) 735-5154

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

PRE-BID DATE: 04/23/2024 TIME: 02:00 PM

PRE-BID PLACE: HGTC, Grand Strand Campus, Bldg. 1000, Room 1176 at Myrtle Beach, SC 29577

BID OPENING PLACE: HGTC, Conway Campus, Building 100, Room 122 at Conway, SC 29526

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Dianna Cecala

2050 Hwy 501 E, Bldg. 100, Room 120

Conway, SC 29526

MAIL SERVICE:

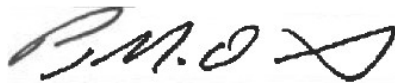
Attn: Dianna Cecala

2050 Hwy 501 E

Conway, SC 29526

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? Yes No

APPROVED BY:



(OSE PROJECT MANAGER)

DATE: 04/08/2024

South Carolina Division of Procurement
Services, Office of State Engineer Version of
 AIA[®] Document A701[™] – 2018

Instructions to Bidders

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

Cite this document as “AIA Document A701[™]– 2018, Instructions to Bidders — SCOSE Version,” or “AIA Document A701[™]–2018 — SCOSE Version.”

South Carolina Division of Procurement Services, Office of State Engineer Version of AIA[®] Document A701[™] – 2018

Instructions to Bidders

for the following Project:

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

Repair/Replace Roofing Systems – Grand Strand Campus

H59-6229-PD

743 Hemlock Avenue, Myrtle Beach, SC 29577

THE OWNER:

(Name, legal status, address, and other information)

Horry-Georgetown Technical College

2050 Highway 501 East

Conway, SC 29526

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

THE ARCHITECT:

(Name, legal status, address, and other information)

The Building Envelope Enclosure Group

1226 Yeamans Hall Road, Suite C

Hanahan, SC 29410

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

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

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

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

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

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

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

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

§ 2.2 Certification of Independent Price Determination

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

§ 2.2.2 By submitting a Bid, the Bidder certifies that:

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

§ 2.2.3 Each signature on the Bid is considered to be a certification by the signatory that the signatory:

- .1 Is the person in the Bidder's organization responsible for determining the prices being offered in this Bid, and that the signatory has not participated and will not participate in any action contrary to Section 2.2.2 of this certification; or
- .2 Has been authorized, in writing, to act as agent for the Bidder's principals in certifying that those principals have not participated, and will not participate in any action contrary to Section 2.2.2 of this certification [As used in this subdivision, the term "principals" means the person(s) in the Bidder's organization responsible for determining the prices offered in this Bid];
- .3 As an authorized agent, does certify that the principals referenced in Section 2.2.3.2 of this certification have not participated, and will not participate, in any action contrary to Section 2.2.2 of this certification; and
- .4 As an agent, has not personally participated, and will not participate, in any action contrary to Section 2.2.2 of this certification.

§ 2.2.4 If the Bidder deletes or modifies Section 2.2.2.2 of this certification, the Bidder must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

§ 2.2.5 Drug Free Workplace Certification

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

§ 2.2.6 Certification Regarding Debarment and Other Responsibility Matters

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

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

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

§ 2.2.6.3 If Bidder is unable to certify the representations stated in Section 2.2.6.1, Bidder must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Bidder's responsibility. Failure of the Bidder to furnish additional information as requested by the Procurement Officer may render the Bidder non-responsible.

§ 2.2.6.4 Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by Section 2.2.6.1 of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

§ 2.2.6.5 The certification in Section 2.2.6.1 of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

§ 2.2.7 Ethics Certificate

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

§ 2.2.8 Restrictions Applicable To Bidders & Gifts

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

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

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

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

§ 2.2.9 Open Trade Representation

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

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

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

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

§ 3.1.3 Reserved

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

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

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

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2. Failure to do so will be at the Bidder's risk. Bidder assumes responsibility for any patent ambiguity that Bidder does not bring to the Architect's attention prior to Bid Opening.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least ten (10) days prior to the date for receipt of Bids.

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

§ 3.2.4 As provided in S.C. Code Ann. Reg. 19-445.2042(B), nothing stated at the Pre-bid conference shall change the Bidding Documents unless a change is made by Addendum.

§ 3.3 Substitutions

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

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten (10) days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.2.4 No request to substitute materials, products, or equipment for materials, products, or equipment described in the Bidding Documents and no request for addition of a manufacturer or supplier to a list of approved manufacturers or suppliers in the Bidding Documents will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten (10) days prior to the date for receipt of Bids established in the invitation to bid.

Init.

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

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

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

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued at least five (5) business days before the day of the Bid Opening, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids. A business day runs from midnight to midnight and excludes weekends and state and federal holidays.

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

§ 3.4.5 When the date for receipt of Bids is to be postponed and there is insufficient time to issue an Addendum prior to the original Bid Date, the Owner will notify prospective Bidders by telephone or other appropriate means with immediate follow up with an Addendum. This Addendum will verify the postponement of the original Bid Date and establish a new Bid Date. The new Bid Date will be no earlier than the fifth (5th) business day after the date of issuance of the Addendum postponing the original Bid Date.

§ 3.4.6 If an emergency or unanticipated event interrupts normal government processes so that Bids cannot be received at the government office designated for receipt of Bids by the exact time specified in the solicitation, the time specified for receipt of Bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Addendum may be issued to reschedule Bid Opening. If state offices are closed in the county in which Bids are to be received at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference. Bidders shall visit <https://www.scemd.org/closings/> for information concerning closings.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

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

§ 4.1.2 All blanks on the Bid Form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in numbers.

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

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

Init.

§ 4.1.6 Pursuant to S.C. Code Ann. § 11-35-3020(b)(i), as amended, Section 7 of the Bid Form sets forth a list of proposed subcontractors for which the Bidder is required to identify those subcontractors the Bidder will use to perform the work listed. Bidder must follow the instructions in the Bid Form for filling out this section of the Bid Form. Failure to properly fill out Section 7 may result in rejection of Bidder's bid as non-responsive.

§ 4.1.7 Contractors and subcontractors listed in Section 7 of the Bid Form who are required by the South Carolina Code of Laws to be licensed, must be licensed as required by law at the time of bidding.

§ 4.1.8 Each copy of the Bid shall state the legal name and legal status of the Bidder. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract.

§ 4.1.9 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 If required by the invitation to bid, each Bid shall be accompanied by a bid security in an amount of not less than five percent of the Base Bid. The bid security shall be a bid bond or a certified cashier's check.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bid Bond shall:

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

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and performance and payment bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected.

§ 4.2.5 By submitting a Bid Bond via an electronic bid bond authorization number on the Bid Form and signing the Bid Form, the Bidder certifies that an electronic bid bond has been executed by a Surety meeting the standards required by the Bidding Documents and the Bidder and Surety are firmly bound unto the State of South Carolina under the conditions provided in this Section 4.2.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

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

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

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

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted. Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.3.6 The official time for receipt of Bids will be determined by reference to the clock designated by the Owner's Procurement Officer or his/her designee. The Procurement Officer conducting the Bid Opening will determine and announce that the deadline has arrived and no further Bids or bid modifications will be accepted. All Bids and bid modifications in the possession of the Procurement Officer at the time the announcement is completed will be timely, whether or not the bid envelope has been date/time stamped or otherwise marked by the Procurement Officer.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

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

§ 5.1.1 At Bid Opening, the Owner will announce the date and location of the posting of the Notice of Intend to Award. If the Owner determines to award the Project, the Owner will, after posting a Notice of Intend to Award, send a copy of the Notice to all Bidders.

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

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

§ 5.2 Rejection of Bids

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

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

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

§ 5.2.3 The Owner may reject a Bid as nonresponsive if the prices bid are materially unbalanced between line items or sub-line items. A Bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the Bid

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

§ 5.3 Acceptance of Bid (Award)

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

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

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Responsibility

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

§ 6.2 Reserved

§ 6.3 Submittals

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

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

§ 6.4 Posting of Intent To Award

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

Room or Area of Posting: Room 120

Building Where Posted: Building 100

Address of Building: 2050 Highway 501 East, Conway, SC 29526

WEB site address (if applicable): www.hgtc.edu/purchasing (Construction Projects, Solicitations, and Awards)

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

§ 6.5 Protest of Solicitation or Award

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

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

- .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.

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.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the state of South Carolina.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of 100% of the Contract Sum.

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

§ 7.2.1 Following expiration of the protest period, the Owner will forward the Contract for Construction to the Bidder for signature. The Bidder shall return the fully executed Contract for Construction to the Owner within seven (7) days. The Bidder shall deliver the required bonds and certificate of insurance to the Owner not later than three (3) days following the date of execution of the Contract. Failure to deliver these documents as required shall entitle the Owner to consider the Bidder’s failure as a refusal to enter into a contract in accordance with the terms and conditions of the Bidder’s Bid and to make claim on the Bid Security for re-procurement cost.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on the Performance Bond and Payment Bond forms included in the Bid Documents.

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

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

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

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

Number	Title	Date
As listed in Table of Contents		

- .5 Specifications

Section	Title	Date	Pages
As listed in Table of Contents			

.6 Addenda:

Number	Date	Pages
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.7 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

- AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
- AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
- The Sustainability Plan:
- Supplementary and other Conditions of the Contract:

.8 Other documents listed below:

(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

ARTICLE 9 Miscellaneous

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

§ 9.1.1 Withholding Requirements for Payments to Nonresidents: SC Code of Laws §12-8-550 requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed \$10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

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

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 Submitting Confidential Information

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

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

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

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

§ 9.2.5 By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, & documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, & (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure.

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

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

§ 9.3 Solicitation Information From Sources Other Than Official Source

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

§ 9.4 Builder's Risk Insurance

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

§ 9.5 Tax Credit For Subcontracting With Minority Firms

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

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

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

§ 9.6 Other Special Conditions Of The Work

 **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)
Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

BOND AMOUNT: \$**PROJECT:**

(Name, location or address, and Project number, if any)
Repair/Replace Roofing Systems - Grand Strand Campus
743 Hemlock Avenue
Myrtle Beach, SC 29577

Owner Project Number: H59-6229-PD

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

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

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

ADDITIONS AND DELETIONS:

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

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

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

Init.

Signed and sealed this day of ,

(Contractor as Principal)

(Seal)

(Witness)

(Title)

(Surety)

(Seal)

(Witness)

(Title)

Init.

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: Horry-Georgetown Technical College
(Agency's Name)

FOR: PROJECT NAME: Repair/Replace Roofing Systems – Grand Strand Campus
PROJECT NUMBER: H59-6229-PD

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 Agency on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to SC Code § 11-35-3030(1), Bidder has submitted Bid Security in the amount and form required by the Bidding Documents.

§ 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 Agency.

§ 5. Bidder herewith offers to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fees, permits, licenses and applicable taxes necessary to complete the following items of construction work:

§ 6.1 **BASE BID WORK** *(as indicated in the Bidding Documents and generally described as follows):* Base Bid work includes complete removal of existing roof systems down to the structural deck for Building 300, Areas F and G (20 squares) and Building 1000, Areas B, B1, C, D, D1, D2, E1-E4, F, G, H, and I (360 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.

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

(Bidder to insert Base Bid Amount on line above)

SE-330
LUMP SUM BID FORM

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

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

ALTERNATE # 1 (Brief Description): *Alternate Number 1 work includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid for Building 300, Areas F and G. ADD 10 Calendar Days, if accepted.*

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): *N/A*

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

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

ALTERNATE # 3 (Brief Description): *N/A*

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

(Bidder to mark appropriate box to clearly indicate the price adjustment offered for each Alternate)

§ 6.3 UNIT PRICES:

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

No.	ITEM	UNIT OF MEASURE	ADD	DEDUCT
1.	LWIC/Gypsum Deck Repair	SF	\$	\$
2.	Metal Deck Repair (Select)	SF	\$	\$
3.	Metal Deck Replacement (Select)	SF	\$	\$
4.	2 x 4	LF	\$	\$
5.	2 x 6	LF	\$	\$
6.	Drain	EA	\$	\$

**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 Agency)</i>	(B) LICENSE CLASSIFICATION or SUBCLASSIFICATION ABBREVIATION <i>(Completed by Agency)</i>	(C) SUBCONTRACTOR and/or PRIME CONTRACTOR <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			
Not Required.			
ALTERNATE #1			
Not Required.			
ALTERNATE #2			
Not Required.			
ALTERNATE #3			
Not Required.			

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

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

Pursuant to instructions in the Invitation for Construction Services, if any, Bidder will provide to Agency upon the Agency's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, 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 Agency. Bidder agrees to substantially complete the Work within 185 Calendar Days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b) LIQUIDATED DAMAGES

Bidder further agrees that from the compensation to be paid, the Agency shall retain as Liquidated Damages the amount of \$ 250.00 for each Calendar Day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This amount is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

- a) Bidder agrees that this bid is subject to the requirements of the laws of the State of South Carolina.
- b) Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.
- c) Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, referenced 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 Document 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 State Engineer Version of
 AIA[®] Document A101[®] – 2017

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

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

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

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

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

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

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

Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

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

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

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

Repair/Replace Roofing Systems – Grand Strand Campus
H59-6229-PD
743 Hemlock Avenue, Myrtle Beach, SC 29577

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

The Building Envelope Enclosure Group
1226 Yeamans Hall Road, Suite C
Hanahan, SC 29410

The Owner and Contractor agree as follows.

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

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

Init.

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TABLE OF ARTICLES

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

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

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

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

§ 3.3 Substantial Completion

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

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

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ARTICLE 4 CONTRACT SUM

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

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

§ 4.2 Alternates

§ 4.2.1 Alternates that are accepted, if any, included in the Contract Sum:

(Insert the accepted Alternates.)

Item	Price
------	-------

§ 4.3 Allowances, if any, included in the Contract Sum:

(Identify each allowance.)

Item	Price
Per Section 01 21 10, Unit Prices and Allowance	\$2,500

§ 4.4 Unit prices, if any:

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

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

§ 4.5 Liquidated damages

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

§ 4.6 Other:

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

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ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

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

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

§ 5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than twenty-one (21) days after receipt of the Application for Payment.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to S.C. Code Ann. § 12-8-550 (Withholding Requirements for Payments to Non-Residents), in accordance with AIA Document A201®–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold three and one-half percent (3.5%), as retainage, from the payment otherwise due.

§ 5.1.7.2 When a portion, or division, of Work as listed in the Schedule of Values is 100% complete, that portion of the retained funds which is allocable to the completed division must be released to the Contractor. No later than ten (10) days after receipt of retained funds from the Owner, the Contractor shall pay to the subcontractor responsible for such completed work the full amount of retainage allocable to the subcontractor's work.

§ 5.1.7.3 Upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than twenty-one (21) days after the issuance of the Architect’s final Certificate for Payment.

ARTICLE 6 DISPUTE RESOLUTION

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

ARTICLE 7 TERMINATION OR SUSPENSION

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

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.2 The Owner’s representative:

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

Name: Harold Hawley
Title: VP Finance and Business Management
Address: 2050 Highway 501 East, Conway, SC 29526
Telephone: 843-349-5279
Email: harold.hawley@hgtc.edu

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

Name: Kevin Brown
Title: Facilities Director
Address: 2050 Highway 501 East, Conway, SC 29526
Telephone: 843-349-5398
Email: kevin.brown@hgtc.edu

§ 8.3 The Contractor’s representative:

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

Name:

Title:
Address:
Telephone:
Email:

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

Name:
Title:
Address:
Telephone:
Email:

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

§ 8.5 The Architect's representative:

Name: Richard L. Cook, Jr.
Title: Managing Partner/Principal
Address: 1226 Yeamans Hall Road, Suite C, Hanahan, SC 29410
Telephone: 843-735-5159
Email: rickc@thebeegroup.org

§ 8.6 Insurance and Bonds

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

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

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

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

§ 8.8 Other Provisions:

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

(Check box if applicable to this Contract)

The Construction Schedule shall be in a detailed precedence-style critical path management (CPM) or 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 milestone dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents.

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

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

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

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101®–2017, SCOSE Version Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101®–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201®–2017, SCOSE Version General Conditions of the Contract for Construction
- .4 Form SE-390, Notice to Proceed – Construction Contract
- .5 Drawings

Number	Title	Date
As listed in Table of Contents		

- .6 Specifications

Section	Title	Date	Pages
As listed in Table of Contents			

- .7 Addenda, if any:

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

- .8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
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Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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- .9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201®–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

Form SE-310, Invitation for Construction Services

Instructions to Bidders (AIA Document A701-2018 OSE Version)

Form SE-330, Contractor’s Bid (Completed Bid Form)

Form SE-370, Notice of Intent to Award

Certificate of Procurement Authority issued by the State Fiscal Accountability Authority

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

OWNER (Signature)

Harold Hawley, VP Finance and Business Management
(Printed name and title)

CONTRACTOR (Signature)

(Printed name and title)

Init.

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

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

for the following PROJECT:
(Name, State Project Number, and location or address)

Repair/Replace Roofing Systems – Grand Strand Campus
H59-6229-PD
743 Hemlock Avenue, Myrtle Beach, SC 29577

THE OWNER:
(Name, legal status and address)

Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

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

THE CONTRACTOR:
(Name, legal status and address)

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

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

TABLE OF ARTICLES

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

ARTICLE A.1 GENERAL

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

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ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

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

§ A.2.2 Liability Insurance

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

§ A.2.3 Reserved

§ A.2.3.1 Reserved

§ A.2.3.1.1 Reserved

§ A.2.3.1.2 Reserved

§ A.2.3.1.3 Reserved

§ A.2.3.1.4 Reserved

§ A.2.3.2 Reserved

§ A.2.3.3 Reserved

§ A.2.4 Optional Insurance.

The Owner shall purchase and maintain any insurance selected below.

§ A.2.4.1 Other Insurance

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

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

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

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

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

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

§ A.3.2 Contractor's Required Insurance Coverage

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

§ A.3.2.2 Commercial General Liability

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

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

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

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

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than \$1,000,000 per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability, Employers Liability, and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. The umbrella policy limits shall not be less than \$3,000,000.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than \$100,000 each accident, \$100,000 each employee, and \$500,000 policy limit for claims, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks.

§ A.3.2.8 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than (\$) per claim and (\$) in the aggregate.

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

§ A.3.3 Required Property Insurance

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

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

Causes of Loss

Sub-Limit

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

Init.

§ A.3.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall replace the insurance policy required under Section A.3.3.1 with property insurance written for the total value of the Project.

§ A.3.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.3.3 is subject to deductibles or self-insured retentions, the Contractor shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.3.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.3.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.3.3.3 If the Owner requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Contractor shall, if possible, include such insurance, and the cost thereof shall be charged to the Owner by appropriate Change Order.

§ A.3.3.4 Before an exposure to loss may occur, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Section A.3.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project.

§ A.3.4 Contractor's Other Insurance Coverage

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

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

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

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

§ A.3.4.2.1 Reserved

§ A.3.4.2.2 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

§ A.3.4.2.3 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

§ A.3.4.2.4 Boiler and Machinery Insurance
The Contractor shall purchase and maintain boiler and machinery insurance as required, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this

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

§ A.3.5 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type	Penal Sum (\$0.00)
Payment Bond	
Performance Bond	100% of Contract Price
	100% of Contract Price

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

§ A.3.5.2 The Performance and Labor and Material Payment Bonds shall:

- .1 be issued by a surety company licensed to do business in South Carolina;
- .2 be accompanied by a current power of attorney and certified by the attorney-in-fact who executes the bond on the behalf of the surety company; and
- .3 remain in effect for a period not less than one (1) year following the date of Substantial Completion or the time required to resolve any items of incomplete Work and the payment of any disputed amounts, whichever time period is longer.

§ A.3.5.3 Any bonds required by this Contract shall meet the requirements of the South Carolina Code of Laws and Regulations, as amended.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

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

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

General Conditions of the Contract for Construction

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

Cite this document as “AIA Document A201[®]–2017, General Conditions of the Contract for Construction—SCOSE Version,” or “AIA Document A201[®]–2017 — SCOSE Version.”

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

General Conditions of the Contract for Construction

for the following PROJECT:

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

Repair/Replace Roofing Systems – Grand Strand Campus
H59-6229-PD
743 Hemlock Avenue, Myrtle Beach, SC 29577

THE OWNER:

(Name, legal status, and address)

Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

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

THE ARCHITECT:

(Name, legal status, and address)

The Building Envelope Enclosure Group
1226 Yeamans Hall Road, Suite C
Hanahan, SC 29410

This version of AIA Document A201–2017 is modified by the South Carolina Division of Procurement, Office of 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 State Engineer. A comparative version of AIA Document A201–2017 showing additions and deletions by the South Carolina Division of Procurement, Office of 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

- .1 The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract.
- .2 A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect.
- .3 Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.
- .4 Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101-2017, Standard Form of Agreement Between Owner and Contractor, SCOSE Version.
- .5 Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201-2017, General Conditions of the Contract for Construction, SCOSE Version.

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Reserved

§ 1.1.9 Notice to Proceed

Init.

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

§ 1.1.10 State Engineer

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

§ 1.2 Correlation and Intent of the Contract Documents

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

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

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

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to

whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

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

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

§ 1.7 Digital Data Use and Transmission

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

§ 1.8 Building Information Models Use and Reliance

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

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, except as provided in Section 7.1.7. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's Representative noted in the Agreement.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen (15) days after receipt of a written request, information necessary and relevant for the Contractor to post Notice of Project Commencement pursuant to S.C. Code Ann. § 29-5-23.

§ 2.2 Reserved

§ 2.3 Information and Services Required of the Owner

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

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

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

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. Subject to the Contractor's obligations, including those in Section 3.2, the Contractor shall be entitled to rely on the accuracy of information furnished by the Owner pursuant to this Section but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services. However, the Owner does not warrant the accuracy of any such information requested by the Contractor that is not otherwise required of the Owner by the Contract Documents. Neither the Owner nor the Architect shall be required to conduct investigations or to furnish the Contractor with any information concerning subsurface characteristics or other conditions of the area where the Work is to be performed beyond that which is provided in the Contract Documents.

§ 2.3.6 The Owner shall furnish the Contract Documents to the Contractor in digital format.

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

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

reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from the drawings and specifications made a part of this Contract.

- 3 Any failure of the Contractor to take the actions described and acknowledged in this Section will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work, or for proceeding to successfully perform the Work without additional expense to the Owner.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

§ 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

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

§ 3.4.2.1 After the Contract has been executed, the Owner and Architect may consider requests for the substitution of products in place of those specified. The Owner and Architect may, but are not obligated to, consider only those substitution requests that are in full compliance with the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:

- .1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to the product specified;
- .2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;
- .3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be performed or changes as a result of the substitution, except for the Architect's re-design costs, and waives all claims for additional costs related to the substitution that subsequently become apparent;
- .4 agrees that it shall, if the substitution is approved, coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects; and
- .5 represents that the request includes a written representation identifying any potential effect the substitution may have on Project's achievement of a Sustainable Measure or the Sustainable Objective.

§ 3.4.2.2 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.

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

§ 3.5 Warranty

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

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

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Pursuant to S.C. Code Ann. § 10-1-180, no local general or specialty building permits are required for state buildings. Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for all other permits, fees, and licenses by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

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

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

§ 3.7.4 Concealed or Unknown Conditions

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

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

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

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

§ 3.10 Contractor's Construction and Submittal Schedules

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

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

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

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

- .1 The fire sprinkler shop drawings shall be prepared by a licensed fire sprinkler contractor and shall accurately reflect actual conditions affecting the required layout of the fire sprinkler system. The fire sprinkler contractor shall certify the accuracy of its shop drawings prior to submitting them for review and approval.
- .2 The fire sprinkler shop drawings shall be reviewed and approved by the Architect's engineer of record (EOR) prior to submittal to the Office of State Fire Marshal (OSFM).
- .3 The EOR shall submit to OSFM in accordance with the OSFM process.
- .4 Unless authorized in writing by OSE, neither the Contractor nor subcontractor at any tier shall submit the fire sprinkler shop drawings directly to OSFM.

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to

the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

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

§ 3.13 Use of Site

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

§ 3.13.2 The Contractor and any entity for which the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner.

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, but

only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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

ARTICLE 4 ARCHITECT

§ 4.1 General

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

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

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents. Any reference in the Contract Documents to the Architect taking action or rendering a decision with a "reasonable time" is understood to mean no more than ten (10) days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.

§ 4.2.2 The Architect will visit the site as necessary to fulfill its obligation to the Owner for inspection services, if any, and, at a minimum, to assure conformance with the Architect's design as shown in the Contract Documents and to observe the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

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

§ 4.2.4 Communications

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

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

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

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

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

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

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

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

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

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

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents so as to avoid delay to the construction of the Project. The Architect's response to such requests will be made in writing with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. Any response to a request for information must be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner has made reasonable and timely objection. The Owner shall not direct the Contractor to contract with any specific individual or entity for supplies or services unless such supplies and services are necessary for completion of the Work and the specified individual or entity is the only source of such supply or service.

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

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

§ 5.2.5 A Subcontractor identified in the Contractor’s Bid pursuant to the subcontractor listing requirements of Section 7 of the Bid Form may only be substituted in accordance with and as permitted by the provisions of S.C. Code Ann. § 11-35-3021. A proposed substitute for a listed subcontractor shall also be subject to the Owner’s approval as set forth in Section 5.2.3.

§ 5.2.6 A Contractor may substitute one prospective subcontractor for another, with the approval of the Owner as follows:

- .1 If the Contractor requests the substitution, the Contractor is responsible for all costs associated with the substitution.
- .2 If the Owner requests the substitution, the Owner is responsible for any resulting increased costs to the Contractor.

§ 5.3 Subcontractual Relations

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor’s Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not

prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise herein, or in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.2 Without limitation on the generality of Section 5.3.1, each Subcontract agreement and each Sub-subcontract agreement shall include, and shall be deemed to include, the following Sections of these General Conditions: 3.2, 3.5, 3.18, 5.3, 5.4, 6.2.2, 7.1.6, 7.3.3, 7.5, 13.1, 13.9, 14.3, 14.4, and 15.1.7.

§ 5.3.3 Each Subcontract Agreement and each Sub-subcontract agreement shall exclude, and shall be deemed to exclude, Sections 13.2 and 13.5 and all of Article 15, except Section 15.1.7, of these General Conditions. In the place of these excluded sections of the General Conditions, each Subcontract Agreement and each Sub-subcontract may include Sections 13.2 and 13.5 and all of Article 15, except Section 15.1.7, of AIA Document A201-2007, Conditions of the Contract, as originally issued by the American Institute of Architects.

§ 5.3.4 The Contractor shall assure the Owner that all agreements between the Contractor and its Subcontractor incorporate the provisions of Section 5.3.1 as necessary to preserve and protect the rights of the Owner and the Architect under the Contract Documents with respect to the work to be performed by Subcontractors so that the subcontracting thereof will not prejudice such rights. The Contractor's assurance shall be in the form of an affidavit or in such other form as the Owner may approve. Upon request, the Contractor shall provide the Owner or Architect with copies of any or all subcontracts or purchase orders.

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

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

§ 6.1.4 Reserved

§ 6.2 Mutual Responsibility

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

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

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

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

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

§ 6.3 Owner’s Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.1.4 If a change in the Work provides for an adjustment to the Contract Sum, the amount of such adjustment must be computed and documented in writing. In order to facilitate evaluation of proposals or claims for increases and decreases to the Contract Sum, all proposals or claims, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized. Where major cost items are subcontracts, they shall be itemized also. The amount of the adjustment must approximate the actual cost to the Contractor and all costs incurred by the Contractor must be justifiably compared with prevailing industry standards. Except as provided in Section 7.1.5, all adjustments to the Contract Sum shall be limited to job specific costs and shall not include indirect costs, home office overhead or profit.

§ 7.1.5 The combined overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:

- .1 For the Contractor, for Work performed by the Contractor's own forces, not to exceed seventeen (17%) percent of the Contractor's actual costs.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractors, not to exceed ten (10%) percent of each Subcontractor's actual costs (not including the Subcontractor's overhead and profit).
- .3 For each Subcontractor involved, for Work performed by that Subcontractor's own forces, not to exceed seventeen (17%) percent of the Subcontractor's actual costs.
- .4 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4.

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

§ 7.1.6 The procedures described in Sections 7.1.4 and 7.1.5 shall be used to calculate any adjustment in the Contract Sum, including without limitation an adjustment permitted under Articles 7, 9, 14, or 15.

§ 7.1.7 If a change in the Work requires an adjustment to the Contract Sum that exceeds the limits of the Owner's Construction Change Order Certification (reference Section 9.1.9 of the Agreement), then the Owner's agreement is not effective, and Work may not proceed until approved in writing by the OSE.

§ 7.1.8 Any change in the Work initiated after the declaration of Substantial Completion must be approved in writing by the OSE regardless of the amount of the change or the Owner's Construction Change Order Certification.

§ 7.2 Change Orders

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

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

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

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

§ 7.2.3 If the Contractor requests a Change Order, the request shall set forth the proposed change in the Work and shall be prepared in accordance with Section 7.2.2. If the Contractor requests a change to the Work that involves a revision

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

§ 7.3 Construction Change Directives

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

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

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

- .1 Mutual acceptance of a lump sum if properly itemized and substantiating data is not available to permit evaluation;
- .2 Unit prices specified in the Contract Documents or subsequently agreed upon, subject to adjustment if any, as provided in Section 9.1.2;
- .3 Cost and a percentage fee, calculated as described in Sections 7.1.4 and 7.1.5;
- .4 in another manner as the parties may agree; or
- .5 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall make an initial determination, consistent with Section 7.3.3, of the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.1.5. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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

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

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

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

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual cost including overhead and profit as confirmed by the Architect from the Schedule of Values.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The

Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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

§ 7.4 Minor Changes in the Work

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

§ 7.5 Pricing Data and Audit

§ 7.5.1 Cost or Pricing Data

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

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

§ 7.5.3 Records Retention

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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§ 8.2.2 The Contractor shall not knowingly commence the Work prior to the effective date of surety bonds and insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

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

- .1 is not caused by the fault or negligence of the Contractor or a subcontractor at any tier, and
- .2 is not due to unusual delay in the delivery of supplies, machinery, equipment, or services when such supplies, machinery, equipment, or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

§ 9.2.1 The Contractor shall submit a schedule of values to the Architect within ten (10) days of full execution of the Agreement, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.2.2 As requested by the Architect, the Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible. The breakdown, being submitted on a uniform standardized format approved by the Architect and Owner, shall be divided in detail, using convenient units, sufficient to accurately determine the value of completed Work during the course of the Project. The Contractor shall update the schedule of values as required by either the Architect or Owner as necessary to reflect:

- .1 the description of Work (listing labor and material separately);
- .2 the total value of the Work;
- .3 the percent and value of the Work completed to date;
- .4 the percent and value of previous amounts billed; and
- .5 the current percent completed, and amount billed.

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

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

methods, techniques, sequences, or procedures; or (3) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

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

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

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

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

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

§ 9.6 Progress Payments

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

§ 9.6.2 Pursuant to S.C. Ann. §§ 29-6-10 through 29-6-60, the Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

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

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

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

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

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

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

§ 9.7 Failure of Payment

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

§ 9.8 Substantial Completion

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

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

§ 9.8.3 Upon receipt of the Contractor's list, the Architect, the Owner, and any other party the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to determine whether the Work or designated portion thereof is substantially complete. The Contractor shall furnish access for the inspection and testing as provided in this Contract. The inspection shall include a demonstration by the Contractor that all equipment, systems and operable components of the Work function properly and in accordance with the Contract Documents.

- .1 If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.
- .2 If more than one Substantial Completion inspection is required, the Contractor shall reimburse the Owner for all costs of re-inspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.
- .3 Representatives of the State Fire Marshal's Office and other authorities having jurisdiction may be present at the Substantial Completion inspection or otherwise inspect the completed Work and advise the Owner whether the Work meets their respective requirements for the Project.

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

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

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

§ 9.8.7 The Owner may not occupy the Work until all required occupancy permits, if any, have been issued and delivered to the Owner.

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion within thirty days after Substantial Completion. Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect, the Owner, and any other party the Architect or the Owner choose will make an inspection on a date and at a time mutually agreeable. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

- .1 If more than one Final Completion inspection is required, the Contractor shall reimburse the Owner for all costs of re-inspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.
- .2 If the Contractor does not achieve Final Completion within thirty days after Substantial Completion or the timeframe agreed to by the parties in the Certificate of Substantial Completion, whichever is

greater, the Contractor shall be responsible for any additional Architectural fees resulting from the delay.

- .3 If OSE has not previously issued a Certificate of Occupancy for the entire Project, the Parties shall arrange for a representative of OSE to participate in the Final Completion inspection.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect:

- .1 an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied,
- .2 a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect,
- .3 a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents,
- .4 consent of surety, if any, to final payment,
- .5 documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties,
- .6 if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner,
- .7 required Training Manuals,
- .8 equipment Operations and Maintenance Manuals,
- .9 any certificates of testing, inspection or approval required by the Contract Documents and not previously provided, and
10. one copy of the Documents required by Section 3.11.

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

- 3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

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

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

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

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

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance which was not discoverable as provided in Section 3.2.1 and not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons or serious loss to real or personal property resulting from such a material or substance encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. Hazardous materials or substances are those hazardous, toxic, or radioactive materials or substances subject to regulations by applicable governmental authorities having jurisdiction, such as, but not limited to, the S.C. Department of Health and Environmental Control, the U.S. Environmental Protection Agency, and the U.S. Nuclear Regulatory Commission.

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

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promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up. In the absence of agreement, the Architect will make an interim determination regarding any delay or impact on the Contractor's additional costs. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the rights of either party to disagree and assert a Claim in accordance with Article 15.

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

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

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

§ 10.3.6 Reserved

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7. The Contractor shall immediately give the Owner and Architect notice of the emergency. This initial notice may be oral followed within five (5) days by a written notice setting forth the nature and scope of the emergency. Within fourteen (14) days of the start of the emergency, the Contractor shall give the Architect a written estimate of the cost and probable effect of delay on the progress of the Work.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

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

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

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

§ 11.1.4 Failure to Purchase Required Property Insurance. If the Contractor fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the

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

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

§ 11.2 Owner's Insurance

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

§ 11.2.2 Reserved

§ 11.2.3 Reserved

§ 11.3 Waivers of Subrogation

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

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

§ 11.3.3 Limitation on the Owner's Waiver of Subrogation

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

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

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

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

§ 11.5 Adjustment and Settlement of Insured Loss

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

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

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

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

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

§ 12.2.2 After Substantial Completion

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

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

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

§ 13.1.2 This Contract is formed pursuant to and governed by the South Carolina Consolidated Procurement Code and is deemed to incorporate all applicable provisions thereof and the ensuing regulations.

§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.3.3 Notwithstanding Section 9.10.4, the rights and obligations which, by their nature, would continue beyond the termination, cancellation, rejection, or expiration of this contract shall survive such termination, cancellation, rejection, or expiration, including, but not limited to, the rights and obligations created by the following clauses:

- 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service;
- 3.5 Warranty
- 3.17 Royalties, Patents and Copyrights
- 3.18 Indemnification
- 7.5 Pricing Data and Audit
- A.3.2.2 Contractor's Liability Insurance (A101, Exhibit A)
- A.3.5 Performance and Payment Bond (A101, Exhibit A)
- 15.1.7 Claims for Listed Damages
- 15.1.8 Waiver of Claims Against the Architect
- 15.6 Dispute Resolution
- 15.6.5 Service of Process

§ 13.4 Tests and Inspections

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

- .1 Inspection, Special Inspections, and testing requirements, if any, as required by the ICC series of Building Codes shall be purchased by the Owner.
- .2 Contractor shall schedule and request inspections in an orderly and efficient manner and shall notify the Owner whenever the Contractor schedules an inspection. Contractor shall be responsible for the cost of inspections scheduled and conducted without the Owner's knowledge and for any increase in the cost of inspections resulting from the inefficient scheduling of inspections.

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

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

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

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

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

§ 13.5 Interest

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

§ 13.6 Procurement of Materials by Owner

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

§ 13.7 Interpretation of Building Codes

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

§ 13.8 Minority Business Enterprises

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

§ 13.9 Illegal Immigration

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

§ 13.10 Drug-Free Workplace

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

§ 13.11 False Claims

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

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§ 13.12 Prohibited Acts

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

§ 13.13 Open Trade (Jun 2015)

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 45 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires substantially all Work to be stopped; or
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents and the Contractor has stopped work in accordance with Section 9.7.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit, and costs incurred by reason of such termination.

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials, or otherwise fails to prosecute the Work, or any separable part of the Work, with the diligence, resources and skill that will ensure its completion within the time specified in the Contract Documents, including any authorized adjustments;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the Contract Documents and the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

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

§ 14.2.5 If, after termination for cause, it is determined that the Owner lacked justification to terminate under Section 14.2.1, or that the Contractor's default was excusable, or that the termination for cause was affected by any other error, then Owner and Contractor agree that the termination shall be conclusively deemed to be one for the convenience of the Owner, and the rights and obligations of the parties shall be the same as if the termination had been issued for in Section 14.4.

§ 14.3 Suspension by the Owner for Convenience

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

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

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

§ 14.4 Termination by the Owner for Convenience

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

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and
- .4 complete the performance of the Work not terminated, if any.

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

§ 14.4.4 Contractor's failure to include an appropriate termination for convenience clause in any subcontract shall not (i) affect the Owner's right to require the termination of a subcontract, or (ii) increase the obligation of the Owner beyond what it would have been if the subcontract had contained an appropriate clause.

§ 14.4.5 Upon written consent of the Contractor, the Owner may reinstate the terminated portion of this Contract in whole or in part by amending the notice of termination if it has been determined that:

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

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

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

§ 15.1.2 Reserved

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Architect. Such notice shall include sufficient information to advise the Architect and other party of the circumstances giving rise to the Claim, the specific contractual adjustment or relief requested and the basis of such request. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later except as stated for adverse weather days in Section 15.1.6.2. By failing to give written notice of a Claim within the time required by this Section, a party expressly waives its Claim.

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

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, including any administrative review allowed under Section 15.6, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

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

§ 15.1.5 Claims for Additional Cost

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

§ 15.1.6 Claims for Additional Time

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

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

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

Init.

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

§ 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the work, and the number of days increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.7 Claims for Listed Damages

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

§ 15.1.7.1 For the Owner, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) attorney's fees, (vii) any interest, except to the extent allowed by Section 13.5 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency.

§ 15.1.7.2 For the Contractor, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest, except to the extent allowed by Section 13.5 (Interest); (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waived as against the Owner. Without limitation, this mutual waiver is applicable to all damages due to either party's termination in accordance with Article 14.

§ 15.1.7.3 Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

§ 15.1.8 Waiver of Claims Against the Architect

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

§ 15.2 Reserved

§ 15.3 Reserved

§ 15.4 Reserved

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

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

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

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

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

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

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

§ 15.6 Dispute Resolution

§ 15.6.1 If a Claim is not resolved pursuant to Section 15.5 to the satisfaction of either party, both parties shall attempt to resolve the dispute at the field level through discussions between Contractor's Representative and Owner's Representative. If a dispute cannot be resolved through Contractor's Representative and Owner's Representative, then the Contractor's Senior Representative and the Owner's Senior Representative, upon the request of either party, shall meet as soon as conveniently possible, but in no case later than twenty-one (21) days after such a request is made, to attempt to resolve such dispute. Prior to any meetings between the Senior Representatives, the parties will exchange relevant information that will assist the parties in resolving their dispute. The meetings required by this Section are a condition precedent to resolution pursuant to Section 15.6.2.

§ 15.6.2 If after meeting in accordance with the provisions of Section 15.6.1, the Senior Representatives determine that the dispute cannot be resolved on terms satisfactory to both the Contractor and the Owner, then either party may submit the dispute by written request to South Carolina's Chief Procurement Officer for Construction (CPOC). Except as otherwise provided in Article 15, all Claims, or controversies relating to the Contract shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the

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

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

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

§ 15.6.5 Service of Process

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

ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION

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.

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: Horry-Georgetown Technical College
 Address: 2050 Highway 501 East
Conway, SC 29526

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: Repair/Replace Roofing Systems – Grand Strand Campus

State Project Number: H59-6229-PD

Brief Description of Awarded Work: Base Bid includes a two-ply modified bitumen roof system for Building 300, Areas F & G (20 squares) and Building 1000, Areas B, B1, C, D, D1, D2, E1-E4, F, G, H, and I (360 squares). ALT 1 includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid for Building 300, Areas F & G.

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

Name: The Building Envelope Enclosure Group
 Address: 1226 Yeamans Hall Road, Suite C
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: Horry-Georgetown Technical College
Address: 2050 Highway 501 East
Conway, SC 29526

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: Repair/Replace Roofing Systems – Grand Strand Campus
State Project Number: H59-6229-PD

Brief Description of Awarded Work: Base Bid includes a two-ply modified bitumen roof system for Building 300, Areas F & G (20 squares) and Building 1000, Areas B, B1, C, D, D1, D2, E1-E4, F, G, H, and I (360 squares). ALT 1 includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid for Building 300, Areas F & G.

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

Name: The Building Envelope Enclosure Group
Address: 1226 Yeamans Hall Road, Suite C
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

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-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 CONTRACT

AGENCY: Horry-Georgetown Technical College

PROJECT NAME: Repair/Replace Roofing Systems – Grand Strand Campus

PROJECT NUMBER: H59-6229-PD

CONTRACTOR: _____

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. Initial Date for Substantial Completion:		
2. Sum of previously approved increases and decreases in Days:		Days
3. Change in Days for this Change Order:		Days
4. Total Number of Days added to this Contract including this Change Order:	0 Days	
5. New Date for Substantial Completion:		

AGENCY ACCEPTANCE AND CERTIFICATION:

I certify that the Agency has authorized, unencumbered funds available for obligation to this contract.

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

Print Name of Representative: _____

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

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

SUBMIT THE FOLLOWING TO OSE

1. SE-380, completed and signed by the Agency.
2. SE-380, Page 2, completed and signed by the Contractor, A/E and Agency, with back-up information to support request.

CHANGE ORDER REQUEST SUMMARY – DESIGN-BID-BUILD

AGENCY: Horry-Georgetown Technical College

PROJECT NAME: Repair/Replace Roofing Systems – Grand Strand Campus

PROJECT NUMBER: H59-6229-PD

CONTRACTOR: _____

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

ADJUSTMENTS IN THE CONTRACT TIME: Requested Change in Days for this Change Order: _____ Days

			(1) Contractor	(2) Subcontractor	(3) TOTAL
Direct Costs (Provide back-up, including hourly rates, invoices, manhours, etc.)	1.	Labor			
	2.	Materials (including Sales Tax)			
	3.	Rental Charges			
	4.	Subtotal Direct Costs (sum lines 1 – 3)	\$ 0.00	\$ 0.00	\$ 0.00
Contractor Markup (per AIA A201, Section 7.1.5)	5.	Contractor OH&P (not to exceed 17% of line 4, col 1)			
	6.	Subcontractor’s OH&P (not to exceed 17% of line 4, col 2)			
	7.	Contractor markup on Subcontractor (not to exceed 10% of line 4, col 2)			
	8.	Total Contractor Markup (sum lines 5 – 7)	\$ 0.00	\$ 0.00	\$ 0.00
Additional Bonding, Insurance and Permit Costs Associated with Change Order	9.	Bonds			
	10.	Insurance			
	11.	Permits, Licenses or Fees			
	12.	Subtotal (sum lines 9 – 11)	\$ 0.00	\$ 0.00	\$ 0.00
TOTAL	13.	Change Order Cost (sum lines 4, 8, 12, col 3)			\$ 0.00

ADJUSTMENTS IN THE CONTRACT SUM: Amount of this Change Order Request: \$ _____

CONTRACTOR ACCEPTANCE:

BY: _____ Date: _____
(Signature of Representative)

Print Name of Representative: _____

A/E RECOMMENDATION FOR ACCEPTANCE:

BY: _____ Date: _____
(Signature of Representative)

Print Name of Representative: _____

AGENCY ACCEPTANCE:

BY: _____ Date: _____
(Signature of Representative)

Print Name of Representative: _____

Instruction to Contractor: Attach documentation as needed to justify the requested change to the contract and submit to A/E or Agency.

SPECIFICATIONS

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

- A. The building will remain completely functional and fully protected at all times during the construction work. All ingress/egress to facility and pedestrian walkways must be maintained with overhead protection when construction is occurring at/over these areas.
- B. Base Bid work includes complete removal of existing roof systems down to the structural deck for Building 300, Areas F and G (20 squares) and Building 1000, Areas B, B1, C, D, D1, D2, E1-E4, F, G, H, and I (360 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.
 - 1. Demolition of the existing roofing system(s) down to the deck in accordance with Section 02 04 00, Cutting and Patching and Section 02 05 00, Demolition and Removal.
 - 2. Modifications and repairs to lightweight insulating concrete/gypsum in accordance with Section 03 52 00, Lightweight Insulating Concrete/Gypsum Deck Repair.
 - 3. Minor deck repairs in accordance with Section 03 60 01, Concrete Grout Repair.
 - 4. Modifications and repairs/replacement to metal form deck systems in accordance with Section 05 31 23, Metal Roof Deck Repair/Replacement.
 - 5. Rough carpentry in accordance with Section 06 10 00, Rough Carpentry.
 - 6. Roof repairs in accordance with Section 07 50 00, General Roof Repairs/Maintenance.
 - 7. Roof membrane, insulation, membrane flashings, associated components, and accessories in accordance with Section 07 55 27, Roof Replacement Modified Bitumen Sheet Roofing System.
 - 8. Sheet metal, components, and accessories in accordance with Section 07 60 00, Sheet Metal.
 - 9. Optional pre-manufactured accessories specified or as required to complete the work in accordance with Section 07 72 00, Roof Accessories.

10. Roof drain repairs in accordance with Section 07 73 15, Roof Drain Repairs/Modifications.
 11. Replacement of sealant systems from the roofing and sheet metal in accordance with Section 07 92 00, Sealants for Roofing and Sheet Metal.
- C. Alternate Number 1 work includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid for Building 300, Areas F and G.
 - D. Unit Prices and Allowance are included in accordance with Section 01 21 10, Unit Prices and Allowance and are to be included in the Base Bid.

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 of this Section is directed to the INSTRUCTIONS TO BIDDERS concerning substitution of materials and equipment.
 1. Submit proposed substitution of products or systems on the form provided in Section 01 60 01, Substitution Request Form.

1.03 CONTRACT METHOD

- A. Construct the Work under a single lump sum contract.
- B. All unit price items listed on the Bid Form and quantities noted in Section 01 21 10, Unit Prices and Allowance are to be included in the Base Bid.
- C. The allowance amount listed in Section 01 21 10, Unit Prices and Allowances, is in addition to the Unit Price quantities and is also to be included in the Base Bid.

1.04 WORK BY OTHERS

- A. Work of the Project executed prior to start of Work of this Contract, and which is specifically excluded from this Contract:
 1. Not applicable.

1.05 CONTRACTOR USE OF PREMISES

- A. Use of tobacco products on project site is not permitted. This includes cigarettes, cigars, pipes, chewing tobacco, e-cigarettes, vape and other smokeless tobacco products.

- B. As applicable, adhere to COVID-19 protocol as outlined by CDC.
- C. Fraternalizing with faculty, staff and students is strictly prohibited.
- D. Limit use of premises to specific work, storage, and access.
 - 1. All temporary protection, covered walkways, signage and monitoring safety is the Contractor's responsibility.
- E. Access to site/roof shall be from the exterior using Contractor's means and methods. No interior access is permitted unless directly related to the work.
- F. Surrounding roads, grounds and sidewalks have highly trafficked areas and must be maintained and ingress/egress protected for pedestrians.
- G. Contractor Layout Space:
 - 1. Limited and only at locations directed and approved by Owner.
 - 2. Only areas adjacent to the building may be used.
 - 3. Do not allow traffic or equipment storage outside of the approved areas.
 - 4. No access to inside of building is permitted without prior approval.
 - 5. Protection of adjacent wall surfaces, roofs and interior spaces is required.
- H. 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.
- I. Maintain safe access to, from and around building for occupants, visitors and pedestrians.
- J. Coordinate use of premises under direction of Owner.
- K. Assume full responsibility for protection and safekeeping of materials, equipment and products under this Contract.
- L. Obtain and pay for use of additional storage of work areas needed for operations under this Contract.
 - 1. All materials and equipment on site will be stored in a trailer, and secured each night.
 - 2. Secure access to ladders and scaffolding at the end of each day.
- M. Daily clean-up and general safety are critical to building function and shall be primary contractor's priority.

- N. Secure motorized equipment and render inoperable during non-working hours.
- O. Adhere to Owner's security, badging and access requirements.
- P. The lightning protection system shall be temporarily disconnected and removed, each day in the area of work, and reconnected at the end of that day. If any damages, missing components, or issues are encountered, contractor is to document and notify Owner/The BEE Group immediately.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 11 00

SECTION 01 21 10

UNIT PRICES AND ALLOWANCE

PART 1 - GENERAL

1.01 SUMMARY

A. Unit Prices

1. The unit price item, unit of measure and add/deduct price are included on the Bid Form. Provide unit prices for the specific items listed on the Bid Form. A lump sum cost for the quantity amount is to be included within the Base Bid for each item.

No.	Item	Base Bid QTY.	Unit of Measure
1.	LWIC/Gypsum Deck Repair	200	SF
2.	Metal Deck Repair (Select)	50	SF
3.	Metal Deck Replacement (Select)	50	SF
4.	2 x 4	200	LF
5.	2 x 6	300	LF
6.	Drain	2	EA

2. The exact locations of these repairs are not defined in the Construction Documents. These areas will be identified during the demolition/construction process.
3. Maintain a daily log of all unit price quantities used based on contract requirements.
4. Notify Owner in writing when 80% of contract quantity is used for each unit price item.
5. 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.
6. Provide photographs or videotape documentation of actual quantities used.
7. Locate quantities and show their locations on elevations or plan view drawings. Provide corresponding photographic or videotape documentation. This is required with each Application for Payment requesting payment for quantities unused.

**Unit Prices and Allowance
01 21 10-1**

23010C

8. Provide actual used quantities on each Application for Payment request.
9. Provide summary of unit prices “required” vs. “used” and above documentation when requested, and as part of Project Close-Out Requirements of Section 01 77 00, Contract Close-Out.

B. Allowance

1. In addition to the unit prices, an allowance of \$2,500 is to be included within the Base Bid for undetermined or unforeseen items which may be discovered that are not currently included in the Contract Requirements.
 - a. Areas of corrosion to be addressed using the unit price quantities listed within this section.
 - b. Corrosion or damages to underlying framing to be addressed with the allowance noted above.
 - c. Allowance is for concrete or metal substrates requiring localized repairs at/directly above the sheet metal counterflashings.
 - d. Any modifications to the decks as required to address diaphragm/connection to walls.
 2. Allowance shall cover the cost of prescribed items not specified in detail with the provision that variations between such amount and the finally determined cost of the prescribed items will be reflected in change orders appropriately adjusting the contract sum.
- C. The cost for a Unit Price or Allowance item shall include all equipment, material and labor, manufacturing, transportation, deliver, handling, and installation including fees, taxes, insurance, bonding, overhead and profit.
- D. Base change order for Unit Prices and Allowance solely on difference between actual quantity of work required and quantity of documented and approved work.

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. Section 01 33 00: Submittals: Submission of Manufacturers' Instructions, Shop Drawings, Product Data, and Certificates.
- D. Section 01 77 00: Contract Close-Out.
- E. Technical Specifications.

1.03 COORDINATION

- A. Provide line item for each of these items on the Schedule of Values in accordance with Section 01 33 00, Submittals.
- B. Provide documentation of these items in accordance with Section 01 77 00, Contract Close-Out.
- C. Provide actual quantities used on each Application for Payment Request.

PART 2 - PRODUCTS

2.01 General Contract Unit Price Quantities

- A. As listed in the summary of each specification section and as indicated on the drawings, provide the Unit Prices as listed on the Bid Form.

2.02 General Contract Allowance

- A. As listed in this specification section, provide the Allowance within the Bid.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 21 10

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.01 SUMMARY

- A. Alternate Number 1 work includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid for Building 300, Areas F and G.

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. All sections of specifications and drawings required to accomplish the general work defined above.

1.03 PROCEDURES

- A. Alternates may be accepted in any order or combination and must determine the low Bidder based on the sum of the Base Bid and Alternates accepted.
- B. Coordinate related work and modify surrounding work as required to complete the Work, including changes under each Alternate, when acceptance is designated in Owner-Contractor Agreement.

1.04 ACCEPTANCE

- A. Alternates may be selected in any combination to be incorporated into the contract, as determined by the Owner. Agency can select any or all alternates, or reject any or all alternates solely at the decision of the agency.
- B. Alternate bids accepted by Owner will be written into Contract or incorporated by change order.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 23 00

**Alternates
01 23 00-1**

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SECTION 01 31 13

COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Each week provide an email summary of the progress schedule work for the previous seven days and the next 14 days no later than Friday by 8 AM.
- B. Provide coordination and notification with Owner, Consultant and Third-Party Inspection Services.
 - 1. Work hours:
 - a. 7 AM to 6 PM, Monday thru Friday.
 - b. Work for Saturday and Sunday shall be requested by Noon on Thursday.
 - 2. Review college schedule online to ensure the work does not conflict with scheduled operations and events including:
 - a. Exam / testing schedules
- C. Maintain safe, protected ingress/egress of all entrances at all times.
- D. Seven (7) days notice is required to Owner and Consultant/Engineer for any element or phase of work where Contractor's access equipment will be removed/relocated to ensure Owner and Consultant/Engineer have access to review and/or observe if requested.
 - 1. To be noted in Progress Schedule Summary.
- E. Seven (7) days notice to Owner and Consultant/Engineer and written approval is required for all items affecting function/use of building, including any shutdowns, interruptions in services, or disconnection of services.
 - 1. This includes any work at or around air intakes, louvers, vents or other mechanical equipment that can allow the odors/fumes/smells of work materials and/or equipment to enter the building.
 - 2. To be noted in Progress Schedule Summary.
- F. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

- G. Use only approved laydown and storage areas discussed in Pre-Construction Conference, unless otherwise discussed and specifically approved by Owner.
- H. 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.
- I. Coordinate space requirements and installation of mechanical and electrical work, which are indicated on Drawings. Coordinate routing for pipes and conduit as closely as possible with Owner. Place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- J. Coordinate Owner furnished equipment, materials, and labor. Provide written notice to Owner, seven (7) days prior to work needed in schedule.
- K. In finished areas contractor should anticipate and verify if concealed pipes, ducts, and wiring within the construction exist except as indicated otherwise. Coordinate locations of fixtures and outlets with finish elements.
- L. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.
- M. Coordinate access to site for correction of defective Work, and Work not in accordance with Construction Documents to minimize disruption of Owner's activities.
- N. Coordinate each 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 within three (3) days.

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.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 31 13

**Coordination
01 31 13-2**

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SECTION 01 31 19

PROGRESS SCHEDULE MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Owner and Consultant/Engineer shall establish and schedule Pre-Construction Conference and all other meetings. The contractor shall coordinate and administer Pre-Construction Conference meeting, weekly progress schedule meetings, and specially called meetings throughout progress of the work. Weekly progress schedule meeting will include contractors, project manager, superintendent and applicable subcontractors.
 - 1. Prepare agenda for meetings.
 - 2. Distribute written notice of each meeting four (4) days in advance of meeting date.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at meetings.
 - 5. Record minutes: Include all significant proceedings and decisions.
 - 6. Reproduce and distribute copies of minutes within three (3) days after each meeting.
- B. Each week, provide an email summary of the progress schedule work for the previous 7 days and the next 14 days no later than Friday by 8 AM.
- C. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- D. Consultant/Engineer may attend meetings to ascertain that work is expedited consistent with Construction Documents and construction schedules.
- E. Consultant/Engineer shall be notified of all such meetings, and be provided written summary of each.

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. Section 01 31 13: Coordination
- D. Section 01 32 03: Project Schedule
- E. Section 01 33 00: Submittals, Construction Schedules and Submittals
- F. Section 01 77 00: Contract Close-Out, Project Record Documents
- G. Technical Specifications

1.03 PRE-CONSTRUCTION CONFERENCE MEETING

- A. Schedule after submittals have been provided and approved, before any construction begins.
- B. Location: At Project Site.
- C. Consultant/Engineer will administer Pre-Construction Conference for execution of Owner-Contractor Agreement and exchange of preliminary submittals.
- D. Attendance:
 - 1. Owner's Representative.
 - 2. Consultant/Engineer.
 - 3. OSE Project Manager (if applicable).
 - 4. Resident Project Representative.
 - 5. Contractor's Superintendent
 - 6. Major Subcontractors.
 - 7. Major Suppliers
 - 8. Others as Appropriate.
- E. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers
 - b. Projected Construction Schedules.
 - 2. Review of project documentation of existing conditions submittal.
 - 3. Critical work sequencing and weekly progress schedule.
 - 4. Major deliveries and priorities

5. Project Coordination
 - a. Designation of responsible personnel.
6. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
 - f. Adequacy of distribution of Construction Documents.
 - g. Procedures for maintaining Record Documents.
 - h. Use of premises:
 - 1) Office work and storage lay down areas.
 - 2) Owner's requirements.
 - 3) Interior access.
 - i. Construction facilities, controls and construction aids.
 - j. Temporary utilities.
 - k. Safety and first-aid procedures.
 - l. Security procedures.
 - m. Schedule.

1.04 PROGRESS MEETINGS

- A. Schedule and administer Project meetings throughout progress of the work at weekly intervals, called meetings, and pre-installation conferences.
- B. Location of Meetings: At Project Site.
- C. Attendance:
 1. Consultant/Engineer as needed.
 2. Subcontractors as appropriate to agenda.

3. Suppliers as appropriate to agenda.

4. Others.

D. Suggested Agenda:

1. Email no later than 8 AM on Friday of each week.

2. Review, approval of minutes of previous meeting.

3. Review of work progress since previous meeting.

4. Field observation, problems, conflicts.

5. Problems, which impede Construction Progress Schedule.

6. Review of off-site fabrication, delivery schedules.

7. Corrective measures and procedures to regain projected schedule.

8. Revisions to Construction Schedule.

9. Plan progress schedule during succeeding work period.

10. Coordination of schedules.

11. Review submittal schedules; expedite as required.

12. Maintenance of quality standards.

13. Review proposed changes for:

a. Effect on construction schedule and on completion date.

b. Effect on other contracts of project.

14. Pending changes and substitutions.

15. Other business.

1.05 INSTALLATION MEETINGS

A. When required in individual specification section, convene a pre-installation conference at work site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Consultant/Engineer seven (7) days in advance of meeting date.

- D. Prepare agenda, preside at conference, record minutes, and distribute copies within three (3) days after the conference to participants, with two copies to Consultant/Engineer.
- E. Review conditions of installation, preparation and installation procedures, and coordination with related work.
- F. Required mock-up submittals shall be received at least 7 days prior to meeting and shall be completed for the pre-installation meeting.

1.06 MANUFACTURERS SITE VISITS

- A. Owner and Consultant/Engineer shall be notified at least three (3) days in advance of any manufacturers site visit.
- B. Owner and Consultant/Engineer shall be provided a complete copy of report/notes within three (3) days of the manufacturer's visit.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 31 19

SECTION 01 32 03
PROJECT SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

- A. Prepare a critical path method (CPM) schedule that includes submittal review, any required engineering, procurement of materials, construction and agency required third party inspection testing activities or manufacturer milestone or other inspections. The CPM schedule shall cover the time from Contract Award/Date of Commencement Proceed to the Contract completion date. The CPM schedule shall incorporate labor, equipment, and quantity resource data. The principles and definitions of the terms used herein shall be as set forth in Associated General Contractors of America Construction Planning and Scheduling Manual, Second Edition.
 - 1. Provide an updated overall project schedule every 2 weeks at or before the bi-weekly progress meeting.
 - 2. Ensure schedule indicates shutdowns, obstructions or other events that affect Owner or requires Owner's approval.
- B. Each week, provide a written progress schedule of the previous 7 days and the planned work for the next 14 days no later than 8 AM on Friday. This is in the coordination requirements of Section 01 31 19, Progress Schedule Meetings and Section 01 31 13, Coordination.
- C. Provide schedules in accordance with Section 01 33 00, Submittals.
- D. Contractor shall request, from the Owner, a calendar of all scheduled events which will/may affect the overall project schedule, weekly progress schedule and sequence of work.
- E. Inclement weather days will not be provided for days when no work was scheduled for that day.

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 31 13: Coordination
- C. Section 01 31 19: Progress Schedule Meetings
- D. Section 01 33 00: Submittals
- E. 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. ASSOCIATED GENERAL CONTRACTORS OF AMERICA (AGCA)
 - 1. Construction Planning and Scheduling Manual, Second Edition, June 2004.

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, Submittals.
- B. Project schedule and format for weekly progress schedule
- C. Weekly progress schedule

1.05 NETWORK SYSTEM FORMAT

- A. The system shall adhere to Section 01 33 00, Submittals with time scaled diagrams and accompanying reports. Facilities with varying completion dates shall be identified by separate sub networks interconnected with the basic diagram and/or specifically coded.
- B. Schedule Diagrams
 - 1. Show activity number, description, early dates, float, and all relationships, i.e. logic ties, resources and cost. Show the sequence, order, and interdependence of activities in which the work is to be accomplished. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the physical completion of preceding activities and how its physical completion restricts or restrains the start of following activities. A minimum of 30 calendar days (22 workdays) duration, or more if so specified, shall be allowed for Owner processing, approval and return of submittals, samples and shop drawings where Owner approval is required.
 - 2. In addition to construction activities, detailed network activities shall include the submittals, procurement, and Owner activities impacting progress.
 - 3. Submittal activities shall include review and approval of all submittals.
 - 4. Procurement activities shall include all materials and equipment, receipt of materials with estimated procurement costs of major items for which payment of materials will be requested in advance of installation, fabrication of special material and equipment, and their installation and testing.

5. Show activities of the Owner that affect progress and contract-required dates for completion of all or parts of the work. Show activities indicating Owner furnished materials and equipment utilizing delivery dates indicated in the clause titled "Owner Furnished Property" of the Contract Clauses.

1.06 SCHEDULE DIAGRAMS

- A. The schedule data shall conform to the following criteria:
 1. All activities shall use a standard calendar of 5 workdays per week, Monday through Friday. Show Contractor defined holidays and Federal holidays as non-workdays. Activities using any other calendar shall be highlighted for the Consultant/Engineer's approval.
 2. Each schedule activity shall be cost, and resource loaded to include each type of trade or labor, e.g., carpenters, plumbers, electricians, etc. Activity duration shall be in workdays. All activities shall indicate the average number of workers per day planned during execution of the activity.
 3. At a minimum, each schedule activity shall contain codes by:
 - a. Responsibility: include but not be limited to Owner Furnished Materials, Contractor/Subcontractor, Supplier/Vendor, Consultant, etc.
 - b. Location, such as, building specific, phases of construction and/or areas within a building.
 - c. Mock-up and approval shall be included within schedule.
 - d. Request of the Consultant/Engineer; additional codes may be required such as phases, buildings, areas within a building.
 - e. Key milestones as identified by contract or furnished by the Consultant/Engineer; Proposed Change (PC) Numbers, Modification Numbers, Requests for Information (RFI's), and/or Bid Items as requested by the Consultant/Engineer.
 - f. All activities must be less than or equal to 7 workdays and \$10,000, unless approved to be greater by the Consultant/Engineer.
 - g. Detailed description of each activity (i.e. asbestos removal, mobilization, roof demolition and installation sheet metal, sealants, etc.). In each activity, give quantity and unit of measure so that the amount of work the activity involves is clearly communicated.
 - h. Only two (2) open-ended activities are allowed; the first and last activities.

- i. Three phases of control (Preparatory, Initial, and Follow-up) must be included in the schedule for each activity identified as a Definable Feature of Work by the Consultant/Engineer (See Quality Control Plan).
- j. Out of sequence progress if applicable shall be handled through Retained Logic, not the Default Option of Progress Override.
- k. Progress shall be calculated based on remaining duration (RD), not percent complete.
- l. All changes to activities except jointly coordinated progress updates (i.e., duration changes, logic revisions, imposition of constraints, etc.) shall be recorded with a note in the activity log field. The log shall include, as a minimum, the date and reason for the change, as well as the Owner representative granting approval for the change.
- m. The use of resource leveling, either manual or automatic, is discouraged. Any resource leveling must be specifically highlighted for the Consultant/Engineer's approval.
- n. The use of start-to-start or finish-to-finish and lags is discouraged. Any relationships other than finish-to-start must be specifically highlighted for Consultant/Engineer approval and recorded with an explanatory note in the activity log field.

1.07 SUBMISSION AND APPROVAL

A. Preliminary Meeting

- 1. If requested by the Consultant/Engineer, participate in a preliminary meeting to discuss the proposed schedule and requirements of this section prior to submission of the network.

1.08 REVIEW AND EVALUATION

- A. The Contractor shall participate in a meeting to discuss review and evaluation of the proposed project schedule by the Consultant/Engineer. Revisions necessary as a result of this review shall be resubmitted for approval of the Consultant/Engineer within 15 calendar days after the conference. The approved schedule shall then be the schedule to be used by the Contractor for planning, organizing, and directing the work, reporting progress, and requesting payment for work accomplished. Approval of the project schedule is required prior to the start of construction.

1.09 CHANGES

- A. If changes in the Contractor's means and methods are necessary, apart from contract modifications (sequencing/logic, duration, further refining of schedule activities and logic, etc.), the Consultant/Engineer shall be notified in writing stating the reasons for the change.

1.10 APPROVED SCHEDULE

- A. Once the Consultant/Engineer has approved the completed schedule, the Contractor shall within 15 calendar days furnish the approved schedule.

1.11 PROGRESS SCHEDULE MEETINGS

- A. Progress schedule meeting to discuss progress and payment shall include a weekly onsite meeting or other regular intervals as required by the Owner. During the meeting the Contractor shall describe proposed revisions and adjustments required to reflect the current status of the project for the Consultant/Engineer's approval.

1.12 CONTRACT MODIFICATION

- A. When a contract modification to the work is required, submit the proposed revisions to the schedule.

1.13 TIME EXTENSIONS

- A. Time extensions will not be considered for contract modification proposals that do not include full documentation for the schedule change. Once the Consultant/Engineer has approved a change, the specific activities and the overall schedule must be updated.
- B. Inclement weather days will not be provided for days when no work was scheduled for that day.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 32 03

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

- A. Procedures
- B. Construction Project Schedule and Weekly Progress Schedules
- C. Schedule of Values
- D. Project Documentation of Existing Conditions
- E. Shop Drawings
- F. Product Data
 - 1. Including sample warranties for all required warranties
- G. Manufacturer's Instructions/Certificates
- H. Samples
- I. Mock-Ups (in-field)
- J. SDS Sheets

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 Subcontractors of this project is directed to the Instruction to Bidders concerning substitution of materials and equipment.
- C. Section 01 11 00: Summary of Work
- D. Section 01 33 02: Required Submittal List
- E. Section 01 77 00: Contract Close-Out: Close-Out Submittals
- F. Technical Specifications

1.03 PROCEDURES

- A. Provide all required submittals, electronically, using the Required Submittal List in Section 01 33 02, Required Submittal List as the Table of Contents. Divide and clearly label submittals by specification section number. A Dropbox link will be set up for posting.

- B. Transmit each item required under the attached submittal list. The Required Submittal List shall be used as the Table of Contents for the submission package. Identify Project, Contractor, subcontractor, major supplier and manufacturer; identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate.
 - 1. Clearly identify in writing any variations or deviations from Construction Documents. Submit required product or system simultaneously with request, to ensure no time is lost if deviation/variation is not approved.
 - 2. Indicate if submittal is a re-submittal.
 - 3. Submit initial progress schedules and schedule of values in duplicate within ten (10) days after date established in Notice to Proceed. Consultant/Engineer will review and return schedules to Contractor within ten (10) days. If required, revise and resubmit within seven (7) days.
- C. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- D. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified: all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto, all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- E. SUBMIT ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITHIN FOURTEEN (14) DAYS OF THE DATE OF COMMENCEMENT. Consultant/Engineer will review and return submittals to Contractor within ten (10) days. Revise and resubmit as required, within seven (7) days, identifying changes made since previous submittal.
 - 1. Notify Consultant/Engineer in writing, at time of submission, of any deviations in submittals from requirements of the Construction Documents.
 - 2. Begin no fabrication or work, which requires submittals until return of submittals stamped "No Exceptions Taken" by Consultant/Engineer.
- F. Distribute copies of reviewed submittals stamped "No Exceptions Taken" by Consultant/Engineer to the Owner, job site file, subcontractors, and other concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.04 CONSTRUCTION PROJECT SCHEDULE AND WEEKLY PROGRESS SCHEDULES

- A. Submit a schedule of intended construction sequence.

1. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of Work as of time of each Application for Progress Payment.
 2. Show submittal dates required for shop drawings, product data, and samples, and product delivery dates, including those furnished by Owner and those under Allowance.
 3. Show submittal dates required for shop drawings, product data, and samples, and product delivery dates, including those furnished by Owner.
 4. Incorporate any selected alternates by Owner as line items.
 5. Provide updated schedule for review on a weekly basis.
 6. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal and include any inclement weather or lost days.
- B. Provide a format for email of progress schedule to be provided each week by 8 AM on Friday. Schedule to include summary of the previous 7 days and the planned work for the next 7 days.
- C. Adhere to Section 01 32 03, Project Schedule.

1.05 SCHEDULE OF VALUES

- A. Submit typed schedule on 8 ½ x 11-inch paper; Contractor's standard form, AIA G703 or media-driven printout will be considered on request.
1. Identify schedule with:
 - a. Title of Project and Location.
 - b. Owner and Project Number.
 - c. Name and Address of Contractor.
 - d. Contract Designation.
 - e. Date of Submittal.
 2. Format:
 - a. Table of Contents of this Project Manual.
 - b. Identify each line item with number and title of the major Specification Sections.

- c. Include in each line item a directly proportional amount of Contractor's overhead and profit.
- d. Revise schedule to list change orders, for each application for payment.
- e. Include all alternates, allowance and unit price items as individual line items on the schedule of values.
 - 1) Provide the deduct amount for each unit price item on the schedule of values.
- f. Value of "Close-Out Documents" (to be no less than \$500.00).

1.06 PROJECT DOCUMENTATION OF EXISTING CONDITIONS

- A. Submit a CD or flash drive of photographs/videos documenting all existing conditions to this property and the adjoining/adjacent properties.
 - 1. Interior (leaks, stains, damaged ceiling tiles, paint, carpet, etc.).
 - 2. Exterior (landscaping, asphalt pavements, concrete surfaces, exterior wall conditions, lightning, security cameras, etc.).
- B. It is the Contractor's responsibility to document existing conditions prior to commencing work. The burden of proof on prior conditions shall be the Contractor's.

1.07 SHOP DRAWINGS

- A. All details will be in accordance with contract drawings.
- B. Submit any clarifications or requested deviations in triplicate.

1.08 PROJECT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturer's standard data to provide information unique to the Work.
- B. Ensure that the product data is current information from the manufacturer.
- C. Provide sample warranties for all required warranties.

1.09 MANUFACTURER'S INSTRUCTIONS/CERTIFICATES

- A. When required in the individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing in quantities specified for product data.
- B. Manufacturer's instructions and requirements shall not take precedence of contract specifications and drawings unless specific approval is requested and approved prior to actual construction.

1.10 SAMPLES

- A. Submit full range of manufacturer's standard colors, textures, and patterns for Consultant/Engineer's selection and approval by the Owner.
- B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices.
- C. Coordinate submittal of different categories for interfacing work.
- D. Include identification on each sample, giving full information.
- E. Submit the number of samples specified in each respective Specification section; Consultant/Engineer will retain one.
- F. Reviewed samples, which may be used in the Work, are indicated in the Specification Section.

1.11 MOCK-UPS (IN-FIELD)

- A. Contractor shall complete an in-field/actual mock-up and/or an initial repair area for each major scope item for review and approval of Consultant/Engineer and Owner.
- B. Location shall be pre-selected and approved by Consultant/Engineer and Owner.
- C. Mock-up shall be of an actual condition(s) on the facility and shall indicate and show materials, methods and quality of application.
- D. Mock-up shall also be reviewed for acceptability of the aesthetic conditions of the work.

1.12 Safety Data Sheets (SDS):

- A. Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.
- B. Provide Safety Data Sheets for all materials being installed or used.
- C. Keep SDS sheets at site at all times during project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 33 00

Submittals
01 33 00-5

23010C

AIA® Document G702® – 1992

Application and Certificate for Payment

TO OWNER: FROM CONTRACTOR:	PROJECT: VIA ARCHITECT: The BEE Group 1226 Yeamans Hall Road, Suite C Hanahan, SC 29410	APPLICATION NO: PERIOD TO: CONTRACT FOR: CONTRACT DATE: PROJECT NOS: / /	Distribution to: OWNER: <input type="checkbox"/> ARCHITECT: <input type="checkbox"/> CONTRACTOR: <input type="checkbox"/> FIELD: <input type="checkbox"/> OTHER: <input type="checkbox"/>
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CONTRACTOR'S APPLICATION FOR PAYMENT

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

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 0.00
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

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.

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 User Notes:



Required Submittals List

Project Title: Repair/Replace Roofing Systems – Grand Strand Campus
Owner Project No.: H59-6229-PD
BEE Project No.: 23010C
Reviewer(s): _____ **Date:** _____
The BEE Group

Submittals are to be forwarded as a single package submission and in accordance with Section 01 33 00, Submittals, including:

- 01 32 03 Project Schedules**
 - 1.04 B. Project Schedule
 - C. Weekly Progress Schedule

- 01 33 00 Submittals**
 - 1.04 A. Construction Project Schedule and Weekly Progress Schedules
 - 1.05 A. Schedule of Values
 - 1.06 A. Project Documentation of Existing Conditions
 - 1.12 A. SDS

- 01 52 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.
 - B3. COVID-19 Plan
 - 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

- 03 52 00 Lightweight Insulating Concrete/Gypsum Deck Repairs**
 - 1.04 C. Product Data
 - D. SDS



- 03 60 01 Concrete Grout Repair**
 - 1.04 C. Design Data
 - D. SDS

- 05 31 23 Metal Roof Deck Repair/Replacement**
 - 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 50 00 General Roof Repairs and Maintenance**
 - 1.04 C. Manufacturer's Catalog Data and Instructions
 - D. Administrative Close-Outs
 - E. SDS

- 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 72 00 Roof Accessories**
 - 1.04 C. Drawings
 - D. Samples
 - E. SDS

- 07 73 15 Roof Drain Repairs/Modifications**
 - 1.04 C. Product Data
 - D. Manufacturer's 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

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Contractor has full and complete responsibility for the quality control of this project. Contractor shall coordinate and control their subcontractors, their work and the materials and equipment they use.
- B. Quality assurance services are provided by the Owner, his representatives and the Third Party Firms for the Owner's exclusive benefit. Within this Contract, the Contractor shall provide scheduling, coordination and written responses to all quality assurance and third party inspection services.
- C. The Contractor is required to provide complete and full access for the Owner and the Owner's Representative to complete Quality Assurance Services.

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. Section 01 33 00 - Submittals: Submission of Manufacturers' Instructions, Shop Drawings, Product Data, and Certificates.
- D. Technical Specifications.

1.03 QUALITY CONTROL OF INSTALLATION

- A. Contractor to maintain daily log of ongoing punch list items based on daily quality control inspections.
- B. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- C. Comply fully with manufacturers' instructions, including each step in sequence.
- D. Should manufacturers' instructions conflict with Construction Documents, request clarification from Consultant/Engineer before proceeding.
- E. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

- F. Perform work by persons qualified to produce workmanship of specified quality.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 REFERENCES

- A. The publications listed in each specification section form a part of this specification to the extent referenced, and to provide clarifications for any issues not covered within this specification or for contractor's benefit or clarification.
- B. Conform to reference standard by date of issue current on date of Construction Documents.
- C. Obtain copies of standards when required by Construction Documents.
- D. Should specified reference standards conflict with Construction Documents, request clarification for Consultant/Engineer before proceeding.
- E. The contractual relationship of the parties to the Contract shall not be altered from the Construction Documents by mention or inference otherwise in any reference document.

1.05 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications sections for review.
- B. Acceptable samples represent a quality level for the work.
- C. Where field sample is specified in individual sections to be removed, clear area after Consultant/Engineer has accepted field sample.

1.06 MOCK-UP

- A. Any required or specified tests will be performed under provisions identified in this section.
- B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Where mock-up is specified in individual sections to be removed, clear area after Consultant/Engineer has accepted mock-up.

1.07 INSPECTION AND TESTING LABORATORY SERVICES

- A. Owner may appoint, employ, and pay for services of an independent firm to perform inspection and testing, unless otherwise required in Construction Documents.
- B. Reports will be submitted by the firm to the Consultant/Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Construction Documents.

- C. Contractor shall provide access and coordination with firm.
- D. Cooperate with Consultant/Engineer and/or independent firm; furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
 - 1. Notify Consultant/Engineer seven (7) days prior to expected time for operations requiring their coordination or review.
 - 2. Make arrangements with the firm and pay for additional samples and tests required for Contractor's use.
 - 3. Re-testing, re-inspections or additional inspections required because of non-conformance to specified requirements shall be performed by the Consultant/Engineer. Payment for these services will be charged to the Contractor by deducting inspection or testing charges from the Contract Sum/Price.

1.08 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Submit qualifications of observer to Owner and Consultant/Engineer five (5) days in advance of required observations.
- B. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, warranty inspection as applicable, and to initiate instructions when necessary.
- C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Schedule site visit a minimum of three (3) days in advance, and submit report in duplicate within three (3) days of visit to Owner and Consultant/Engineer for review.

1.09 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, the Contractor shall maintain a log of all repair unit priced quantities used based on contract requirements.
- B. The Contractor shall notify Owner in writing when 80% of quantity is used for each unit price item.
- C. Provide photograph or video documentation of repairs.
- D. Locate quantities and show their locations on the drawings.
- E. Provide actual used quantities on each Application for Payment request.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 45 00

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. Charcoal Filters at Air Intakes
- B. Landscape/Paving Protection of Adjacent Surfaces
- C. Building Envelope
- D. Coordination of Space
- E. Electricity and Lighting
- F. Communication Services
- G. Water
- H. Sanitary Facilities
- I. Barriers
- J. Protection of Installed Work
- K. Cleaning During Construction
- L. Field Offices, Sheds and Trailers
- M. Demobilization
- N. General Safety / Fire Safety
- O. Security
- P. Identification of Contractor Personnel

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. Section 01 11 00: Summary of Work: Contractor use of premises.

D. Section 01 77 00: Contract Close-Out: Final Cleaning

E. Technical Specifications

1.03 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 needed 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.

1.04 LANDSCAPE/PAVING PROTECTION OF ADJACENT SURFACES

A. Carefully protect trees, shrubbery, grass, concrete, walkways and asphalt surfaces during the course of the project.

B. Damaged trees and shrubbery will require replacement with new, of equal size/age at no cost to the Owner.

C. Return grass to its original condition.

D. Ensure construction sequence protects the facility, grass, grounds, concrete, walkways and asphalt pavement surfaces.

E. Provide protection for concrete, asphalt and other finished surfaces adjacent to work areas.

1.05 BUILDING ENVELOPE

A. Provide protection to all building envelope surfaces (roofs, walls, fenestrations, landscaping, etc.).

B. Cover roof with plywood, or other approved material, in area of work (i.e. path of traffic, scaffolding, etc.).

- C. Clean work area and keep all horizontal surfaces (roof and grade) free of construction debris daily.
- D. Report damages immediately. Contractor is required to have proper repairs made within 7 days of occurrence. However, temporary repairs shall be immediate and maintained until proper, long-term repairs are made. Owner and Consultant/Engineer must approve of repair technique to be used.
- E. Minimize traffic over roof and completed work.
- F. The lightning protection system shall be temporarily disconnected and removed, each day in the area of work, and reconnected at the end of that day. If any damages, missing components, or issues are encountered, contractor is to document and notify Owner/The BEE Group immediately.

1.06 COORDINATION OF SPACE

- A. Owner and Consultant/Engineer shall determine actual laydown areas, storage areas, and extent of work site.
- B. No personally owned vehicles allowed at site.

1.07 ELECTRICITY AND LIGHTING

- A. Provide service required for construction operations through existing building service. Owner will provide electricity at the source. Contractor must provide access to that source. The method of access must be approved by Owner and conform to all applicable electrical and building codes. All temporary electrical wiring must be provided with proper conduit protection. The Owner must approve the path of the access.
- B. Permanent lighting may be used during construction. Maintain lighting and make routine repairs.
- C. Return all services to their original condition.

1.08 COMMUNICATION SERVICES

- A. Emergency telephone numbers must be made available for the Owner, for the Project Manager, Superintendent and Foreman for the Contractor.

1.09 WATER

- A. Provide service required for construction operations from existing building systems. Extend branch piping with outlets located so that water is available by use of hoses.
- B. Return all services to their original condition.

1.10 SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Do not use existing building facilities.

1.11 BARRIERS

- A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide eight (8) foot high fence around construction laydown area with locks, or provide secure trailer at site. (Construction: Commercial grade chain link fence with non-penetrating posts/supports.)
- C. Provide barriers around trees and plants designated to remain. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

1.12 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished surface from traffic, movement of heavy objects, and storage.
- C. Prohibit traffic and storage on newly installed work surfaces, on sidewalks, roads, and landscaped areas.

1.13 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish on the roof and on the ground; requires daily clean up and periodically dispose of off-site.
- B. Clean site daily.

1.14 FIELD OFFICES, SHEDS AND TRAILERS

- A. Office: Not required.
- B. Storage Sheds for Tools, Materials, and Equipment: Weather-tight, with adequate space for organized storage and access, and lighting for inspection of stored materials.

1.15 DEMOBILIZATION

- A. Remove temporary protection, materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities. As a minimum, remove spills to a depth of 2 feet beyond the contaminant. Restore existing facilities used during construction to specify, or to original, condition.

1.16 GENERAL SAFETY / FIRE SAFETY

- A. Protection and safety of occupants, pedestrians, visitors, workmen, and building and grounds is of vital importance. Take precautions to ensure a safe work area.
- B. Conduct work in accordance with applicable federal, state, and local regulations governing safety and safe work practices.
- C. Ingress/Egress: Provide necessary protection for pedestrians, occupants and visitors related to this project.
- D. If a hurricane or high-wind event is projected for project site location, properly protect and secure all elements of the facility.
- E. Fire Safety Procedures
 - 1. Fire apparatus access shall be maintained for fire and EMS.
 - 2. Work out any fire alarm or sprinkler impairments with the owner/occupants and notify local responding fire department of any changes in protection.
 - 3. Fire watches where any hot work or cutting operations being performed of at least 30 minutes after the event and documented.

1.17 SECURITY

- A. Establish and maintain security program to ensure site is cleaned up of all materials and equipment at the end of each workday to ensure pedestrians, occupants and visitors related to this project have safe secure environment specific to the construction project.

1.18 IDENTIFICATION OF CONTRACTOR PERSONNEL

- A. While on site, wear uniforms with company name, or picture identification badges with name of person and company name.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 50 00

SECTION 01 52 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 50 00, Construction Facilities and Temporary Controls 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.
 - 2. Although not currently required, if required/recommended by the CDC, this includes implementing specific measures for protection of workers and other individuals from COVID-19 in accordance with CDC protocols and Owner requirements.
- 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, OSHA and EPA.
- H. As a minimum, individuals violating safety requirements will be removed for one day for the first offense and removed permanently for the second offense.
- I. Basis for several requirements in this section is COE EM-385-1-1.

- J. 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. CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
 - 1. COVID-19 Recommended Protocol
- E. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code

2. IEBC (2021) International Existing Building Code
 3. IFC (2021) International Fire Code
- F. 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
- G. OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION:
1. 29 CFR 1926 – Safety and Health Regulations for Construction
- H. SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL (SCDHEC):
1. SCDHEC Regulation 61-107.11, Construction, Demolition and Land-Clearing Debris Landfills
- I. 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.
- L. 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.
- M. Significant Accident. Any contractor accident which involves falls of (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment

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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.

- N. 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 33 00, Submittals.

B. Plans

1. Accident Prevention Plan (APP)
2. Health and Safety Plan (HASP)
 - 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.
3. Although not currently required, COVID-19 Plan (in accordance with CDC/OSHA guidelines and in addition to the Owner's requirements) will be adhered to if changes occur.
 - a. Safety plans shall include a separate COVID-19 Plan outlining specifics measures and procedures on how contractor intends to operate while protecting workers and site/facility.
 - b. Contractor shall submit letter indicating they acknowledge and are familiar with OSHA's COVID-19 information.

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, Section 16.B.

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 33 00, 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 in accordance with COE EM-385-1-1 Section 16.H, using Form 16.3 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, Section 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, Section 12.
7. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with COE EM-385-1-1, Section 16.H.02, using Form 16.3.
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 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. Monthly Exposure Report

- a. Monthly exposure reporting, to the Owner is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

D. 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.

E. 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).
 - b. 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 Sections 22 and 24.B 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 EM 385-1-1, Section II and 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 Section 16).
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

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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 34.A 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 34.A.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. To ensure exposure to any hazardous atmosphere is kept below its action level.
3. Ensure the use of rescue and retrieval devices in confined spaces greater than 5 feet in depth. Conform to Sections 34.A.06, 34.A.07 and 34.A.09 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 34.A.08 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 45 00, Quality Control.

3.11 FIRE SAFETY

A. General

1. Roofing operations utilizing heat-producing systems or other ignition sources shall be conducted in accordance with Sections 3318.2, 3318.3 of Chapter 35 of the IFC.

B. 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.

C. Fire Safety Procedures

1. Fire apparatus access shall be maintained for fire and EMS.
2. Work out any fire alarm or sprinkler impairments with the owner/occupants and notify local responding fire department of any changes in protection.
3. Fire watches where any hot work or cutting operations being performed of at least 30 minutes after the event and documented.

END OF SECTION 01 52 05

SECTION 01 60 00

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Options (Prior to Bid)
- E. Variations (After Contract Award)
- F. Systems Demonstration

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. Section 01 11 00: Summary of Work
- D. Section 01 33 00: Submittals
- E. Section 01 60 01: Substitution Request Form
- F. Section 01 77 00: Contract Close-Out
- G. Technical Specifications

1.03 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a specification section, shall be the same, and shall be interchangeable.

1.04 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.

- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

1.05 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions. See applicable technical specification sections.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Arrange storage to provide access for inspection. Periodically inspect to ensure products are undamaged, and are maintained under required conditions.
- D. Store all equipment and materials on site in a trailer and secure at end of each days construction.

1.06 PRODUCT OPTIONS (PRIOR TO BID)

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.
- B. Products Specified by Naming One or More Manufacturers: Submit a request for substitution for any manufacturer not specifically named.
- C. Products Specified by Naming Only One Manufacturer: No options, no substitutions allowed.

1.07 VARIATIONS (AFTER CONTRACT AWARD)

- A. Variation Consideration: After Contract has been executed, Owner will consider a formal request for variation (or deviation) of minor products, systems or criteria as field conditions justify, only for the benefit of the owner under the following conditions:
 - 1. Extended delivery time would seriously delay completion of project, or specified item is no longer available, or for unforeseen reasons beyond control of Contractor.
 - 2. Request is accompanied by complete data on proposed variation substantiating compliance with Construction Documents including product identification and description, performance and test data, references and samples where applicable, and an itemized comparison of proposed variation with products

specified or named by Addenda, with data relating to Contract time schedule, design and artistic effect where applicable and its relationship to separate contracts.

3. Request is accompanied by accurate cost data on proposed variation in comparison with product specified, whether or not modification of Contract Sum is to be a consideration.
- B. Contractor Representations: Request for substitutions based on above, when forwarded by Contractor to Consultant/Engineer, are understood to mean that Contractor:
1. Represents that he has personally investigated proposed substitute product and determined that it is equal or superior in all respects to that specified.
 2. Will provide the same guarantee for substitution that he would for that specified.
 3. Certifies that cost data presented is complete and includes all related costs under this Contract, but excludes costs under separate contracts and Consultant/Engineer's re-design costs, and that he waives all claims for additional costs related to substitution which subsequently become apparent.
 4. Will coordinate installation of accepted substitute, making such changes as may be required for work to be complete in all respects.
- C. Non-Consideration of Requests: Substitutions will not be considered if:
1. They are indicated or implied on shop drawing submissions without formal request required above.
 2. For their implementation they require a substantial revision of Construction Documents in order to accommodate their use.
- D. Approval, by Consultant/Engineer, of substitute materials and equipment shall not relieve Contractor from his responsibility to supply and install any additional materials, equipment or labor required to make substitution properly function within intent of Construction Documents, as issued for Bid, whether or not such additional materials, equipment or labor are shown on data submitted with request for approval and whether or not recognized by Consultant/Engineer or Contractor. Contractor shall supply and install such required additional material, equipment or labor solely at his own expense and at no additional cost to Owner.

1.08 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to Consultant/Engineer and Owner.
- B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 60 00



Substitution Request Form

Project Title: Repair/Replace Roofing Systems – Grand Strand Campus
Owner Project No.: H59-6229-PD
BEE Project No.: 23010C
Submit To: Amanda Matlock **Email:** amandam@thebeegroup.org
The BEE Group

Complete and submit a copy of this form for approval of each proposed substitute item.

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

	Specified Item		Proposed Substitution
Section:			
Paragraph:			
Manufacturer:			
Product:			

Attached are complete technical data for proper installation of proposed substitution. Laboratory tests and complete information on changes to drawings and/or specifications are included if applicable.

A. Clearly identify the products, materials and/or systems proposed to be substituted, and the equivalent material, product and/or system.

B. What is the total cost difference considering the overall project requirements?

C. What effect does substitution have on the overall project and schedule?

D. Differences between proposed substitution. Substantiate that the product/system proposed is equal or better than the specified item/system and meets all other contract requirements.

E. Manufacturer's warranties/guarantees of proposed and specified items:

F. What is the advantage/benefit for the owner to select/approve the proposed substitution?

The undersigned states that the function, appearance and quality are equivalent to or superior to the specified item.

SUBMITTED BY: _____
Signature
Firm
Date

Notification of Accepted Substitutions prior to bid will be by Addendum.

Substitution Request Form
01 60 01-1

23010C



SECTION 01 77 00

CONTRACT CLOSE-OUT

PART 1 - GENERAL

1.01 SUMMARY

- A. Close-Out Procedures
- B. Unit Price Quantities and Allowance
- C. Re-inspection Fees
- D. Final Cleaning
- E. Project Record Documents
- F. Operation and Maintenance Data
- G. Warranties
- H. Contract Close-Out Binder

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. Section 01 11 00: Summary of Work.
- D. Section 01 50 00: Construction Facilities and Temporary Controls: Cleaning during construction.
- E. Section 01 77 05: Three-Year Contractor Warranty
- F. Section 01 77 15: Certification of Asbestos-Free Materials
- G. Section 01 77 20: Certificate of Final Completion – SE-560
- H. Section 01 77 25: Contract Close-Out Check List
- I. Technical Specifications

1.03 CLOSE-OUT PROCEDURES

- A. Submit all required Close-Out Documents to the BEE Group.

**Contract Close-Out
01 77 00-1**

- B. All work and punchlist items must be complete to provide all required Close-Out Documents.
- C. In accordance with Section 01 33 00, Submittals, the value for Close-Out Documents will be no less than \$500.00.
- D. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- E. Owner will occupy project for the purpose of conduct of business, under provision stated in Certificate of Substantial Completion.
- F. When Contractor considers work has reached final completion, submit required written certification that Construction Documents have been reviewed, work has been inspected, and that work is complete in accordance with Construction Documents and ready for Consultant/Engineer's inspection.
- G. In addition to submittals required by the Conditions of the Contract, provide submittals required by governing authorities. Submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- H. Consultant/Engineer will issue final change order reflecting approved adjustments to Contract Sum not previously made by change order.

1.04 UNIT PRICED QUANTITIES AND ALLOWANCE

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, 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.

1.05 REINSPECTION FEES

- A. Should status of completion of work require re-inspection by Consultant/Engineer due to failure of work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Consultant/Engineer's compensation for re-inspection services from final payment to Contractor.
- B. Should the work exceed the contract substantial completion date, the Contractor will be responsible for Consultant/Engineer site visits/support for the Owner. Owner will deduct the amount of the Consultant/Engineer's services from the final payment.

1.06 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean surfaces exposed to view, remove temporary labels, stains and foreign substances and polish transparent and glossy surfaces. Clean roofs, scuppers, roof drains, and drainage systems.
- C. Clean site, sweep paved areas, rake clean other surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site. Contractor will provide final cleaning after final acceptance.
- E. Site shall be in original or new condition upon completion.

1.07 PROJECT RECORD DOCUMENTS

- A. Record information on a set of drawings provided by Owner. Legibly mark each item to record actual construction, including:
 - 1. Field changes of dimension and detail.
 - 2. Changes made by modifications.
 - 3. Details not on original Contract Drawings.
 - 4. References to related shop drawings and modifications.
- B. Store documents separate from those used for construction.
- C. Keep documents current; do not permanently conceal any work until required information has been recorded.
- D. At Contract Close-Out, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list documents, and signature of Contractor.

1.08 OPERATION AND MAINTENANCE DATA

- A. Prepare instructions and data in the form of an instruction manual by personnel experienced in maintenance and operation of described products.
- B. Submit the following:
 - 1. Part 1: Directory, listing names, addresses, email addresses and telephone numbers of Consultant/Engineer and Contractor.

2. Part 2: Operation and maintenance instructions, arranged by specification division. For each specification division, give names, addresses, and telephone numbers of subcontractors and supplies. List:
 - a. Appropriate design criteria.
 - b. List of Materials.
 - c. Maintenance instructions.
 - d. Shop drawings and product data.
- C. If applicable, provide roof information card as required within roof system sections.

1.09 WARRANTIES

- A. Date all warranties on or after the awarded Substantial Completion date.
- B. Manufacturer's Warranties
 1. Provide manufacturer's warranties for each individual specification section meeting specification requirements.
 - a. Attach copy of manufacturer's inspection punch list, any required letters of clarification, and flashing endorsement.
- C. Contractor Warranties
 1. Provide the Three-Year Contractor Warranty as required in the Contract Documents.

1.10 CONTRACT CLOSE-OUT BINDER

- A. Use the Close-Out Checklist included in the Contract Documents as the "Table of Contents".
- B. Provide one (1) hard copy and one (1) electronic copy on flash drive of all required documents.
- C. Include a copy of the Final Change Order and the Final Application for Payment.
 1. The *original* Request for Substantial Completion, Request for Final Completion, Final Change Order and Final Application for Payment should not be included in the Close-Out Binder.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01 77 00
Contract Close-Out
01 77 00-4

23010C

**THREE-YEAR CONTRACTOR WARRANTY
FOR REPAIR/REPLACE ROOFING SYSTEMS – GRAND STRAND CAMPUS**

WHEREAS, _____ of
(Address) _____

Telephone: _____ herein called the "Prime Contractor", has performed the work for the
Repair/Replace Roofing Systems – Grand Strand Campus project.

Owner: Horry-Georgetown Technical College
2050 Highway 501 East
Conway, SC 29526

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 **Repair/Replace Roofing Systems – Grand Strand Campus project (BEE Project Number: 23010C).**

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

1. Warranty covers the work within this Contract by the Contractor to said **roofing** 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 **roofing** 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 **roofing** 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 **roofing** 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 **roofing** 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 **roofing** 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: _____



AIA Document G715™ – 2017

Supplemental Attachment for ACORD Certificate of Insurance 25

PROJECT: (name and address) Repair/Replace Roofing Systems Grand Strand Campus 743 Hemlock Avenue, Myrtle Beach, SC 29577 Owner Project Number: H59-6229-PD OWNER: (name and address) Horry-Georgetown Technical College 2050 Highway 501 East Conway, SC 29526	CONTRACT INFORMATION: Contract For: Date: ARCHITECT: (name and address) The BEE Group 1226 Yeamans Hall Road, Suite C Hanahan, SC 29410	CERTIFICATE INFORMATION: Producer: Insured: Date: CONTRACTOR: (name and address)
---	---	--

A. General Liability	Yes	No	N/A
1. Does this policy include coverage for:			
a Damages because of bodily injury, sickness, or disease, including occupational sickness or disease, and death of any person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Personal injury and advertising injury?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Damages because of physical damage to or destruction of tangible property, including the loss of use of such property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Bodily injury or property damage arising out of completed operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e The Contractor's indemnity obligations included in the Contract Documents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does this policy contain an exclusion or restriction of coverage for:			
a Claims by one insured against another insured, where the exclusion or restrictions is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Claims for bodily injury other than to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Claims for the Contractor's indemnity obligations included in the Contract Documents arising out of injury to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Claims for loss excluded under a prior work endorsement or other similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g Claims related to residential, multi-family, or other habitational projects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h Claims related to roofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i Claims related to exterior insulation finish systems, synthetic stucco, or similar exterior coatings or surfaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j Claims related to earth subsistence or movement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k Claims related to explosion, collapse, and underground hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Other Insurance Coverage	Yes	No	N/A
1. Indicate whether the Contractor has the following insurance coverages and, if so, indicate the coverage limits for each.			
a Professional liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
b Pollution liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
c Insurance for maritime liability risks associated with the operation of a vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Coverage limits:
- d Insurance for the use or operation of manned or unmanned aircraft
- Coverage limits:
- e Property insurance
- Coverage limits:
- f Railroad protective liability insurance
- Coverage limits:
- g Asbestos abatement liability insurance
- Coverage limits:
- h Insurance for physical damage to property while it is in storage and in transit to the construction site
- Coverage limits:
- i Other:

(Authorized Representative)

(Date of Issue)



Certification of Asbestos-Free Materials

Project Title: Repair/Replace Roofing Systems – Grand Strand Campus
Owner Project No.: H59-6229-PD
BEE Project No.: 23010C

1. I am authorized to bind _____ (Prime Contractor's 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 77 15 - 1

23010C



Date

Via Email: amandam@thebeegroup.org

Amanda Matlock
The Building Envelope Enclosure Group
1226 Yeamans Hall Road, Suite C
Hanahan, SC 29410

subject: Request for Substantial Completion
Repair/Replace Roofing Systems – Grand Strand Campus
Owner Project Number: H59-6229-PD
BEE Project Number: 23010C

Amanda:

In accordance with the Contract requirements, please accept this letter as notification and request for Substantial Completion. A copy of our punchlist is attached. We understand that substantial completion was required on (date)_____.

We herein request Substantial Completion for (date)_____. We request your response to schedule a Substantial Completion Inspection.

Sincerely,

Contractor Signature

Enclosure: Contractor Punchlist

SE-560

CERTIFICATE OF FINAL COMPLETION

AGENCY: Horry-Georgetown Technical College

PROJECT NAME: Repair/Replace Roofing Systems – Grand Strand Campus

PROJECT NUMBER: H59-6229-PD

CONTRACTOR: _____

CONTRACTOR'S NOTIFICATION AND CERTIFICATION

I hereby notify the A/E and the Agency that Contract Work for the above Project has or will achieve Final Completion, as defined in the Project Manual and in conformance with the requirements of the Contract and the *Manual for Planning and Execution of Permanent Improvement Projects*, on the date shown below for the inspection. This certification declares that:

- A. All items of the punch-list and all items required by the Construction Documents have been completed.
- B. All Work is in conformance with the Contract Documents.
- C. All other requirements of the Contract related to Final Completion have been accomplished, to include delivery of all operational and maintenance manuals, record drawings, maintenance training, warrantee certificates and start up activities.

BY: _____

(Signature of Contractor Representative)

PRINT NAME: _____

TITLE: _____

DATE FOR FINAL COMPLETION INSPECTION: _____

A/E CERTIFICATION AND AGENCY ACCEPTANCE OF FINAL COMPLETION

The A/E and Agency agree that the Project is complete and the Final Inspection of the Project was acceptable. Final Completion of the Project is hereby declared to be effective on the date shown below.

DATE OF FINAL COMPLETION: _____

SPECIAL CONDITIONS OR STIPULATIONS CONCERNING FINAL COMPLETION:

THIS FORM DOES NOT CONFER APPROVAL TO OCCUPY/USE THE FACILITY

A/E CERTIFICATION

BY: _____

(Signature of A/E Representative)

PRINT NAME: _____

TITLE: _____

AGENCY ACCEPTANCE

BY: _____

(Signature of Agency Representative)

PRINT NAME: _____

TITLE: _____

INSTRUCTIONS TO THE AGENCY:

1. Forward a copy of the completed SE-560 and any attachments to OSE.
2. Upon final completion and the Agency's receipt and approval of the Contractor's final payment application, the Agency must pay the Contractor all funds remaining due, including all amounts retained from progress payments.

Close-Out Checklist

Repair/Replace Roofing Systems – Grand Strand Campus

Owner Project Number: H59-6229-PD

BEE Project Number: 23010C



		Awarded Substantial Completion Date: _____	Review Comments
1	Substantial Completion		
	a.	Request in writing for substantial completion using the BEE Form.	
	b.	Submit contractor punchlist with request for substantial completion.	
	c.	Certificate of Substantial Completion SE 550.	
	1)	Generated by BEE and forwarded for signature once the substantial completion date is awarded.	
2	Final Completion		
	a.	Request for Final Completion using the SE-560.	
	b.	Submit request with BEE's Initialed Substantial Completion Punchlist.	
3	Affidavit of Payment of Debts and Claims (AIA G706)		
	a.	Notarized and Sealed (Visible).	
	b.	Signed and Dated.	
	c.	Correct Project Information.	
4	Affidavit of Payment of Release of Liens (AIA G706A)		
	a.	Notarized and Sealed (Visible).	
	b.	Signed and Dated.	
	c.	Signed and Dated.	
5	Consent of Surety (AIA G707)		
	a.	Notarized and Sealed (Visible).	
	b.	Signed and Dated.	
	c.	Correct Project Information.	



6	Insurance		
	a.	Submit Supplemental Attachment for ACORD Certificate of Insurance 25-SAIA G715.	
	b.	Provide a statement on company letterhead, dated and signed using the following verbiage: “Insert Contractor Name knows of no reason that the completed project insurance will not be renewable to cover the period required by the contract documents.”	
7	Information Card		
	a.	Submit paper copy of form(s) for each system for review.	
	b.	Install approved card in designated location at facility.	
8	Manufacturer’s Warranty		
	a.	Submit manufacturer’s warranty, dated on or after the awarded substantial completion date.	
	b.	Ensure insulation is included.	
9	Owner’s Operations and Maintenance Data		
	a.	Submit any required / necessary operations / maintenance data for systems.	
10	Three-Year Contractor Warranty		
	a.	Submit Three-Year Contractor Warranty on the form included in the Contract Documents, dated on or after Substantial Completion date and signed.	
11	Punchlist(s)		
	a.	Submit BEE Punchlist(s). Initial all items as being complete.	
		1) Substantial Completion.	
		2) Final Completion.	

12	List of Materials and Supplier Information		
	a.	Submit List of Materials used by Specification Section.	
	b.	Submit Supplier Address/Phone Number.	
13	Asbestos, Lead, and Other Hazardous Materials		
	a.	Submit Certificate of Asbestos-Free Materials.	
14	Record Drawings		
	a.	Submit a set of contract drawings with all field changes/modifications shown in red.	
15	Summary of Unit Prices		
	a.	Submit required documentation of required unit prices.	
	b.	Submit summary balance of all unit prices and remaining balance.	
16	Final Change Order		
	a.	Include an executed copy of the final change order.	
17	Final Application for Payment		
	a.	Submit final application for payment on the form included in the Contract Documents.	
18	Flash Drive Containing Close-Out Documents		
	a.	One flash drive is provided.	Provided by BEE.

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. Use proper shoring, bracing and protection at all times.
 3. Uncover work to provide for installation, inspection, or both, of ill-timed work.
 4. Coring and cutting required for installation of new drains and existing overflow scupper as well as modifying existing drainage outlets and replacement of all existing drain accessories (clamping rings, bolts, and strainers).
 5. Upon removal of roofing at the various areas of replacement, review decking for required repairs/localized replacement and diaphragm connection if needed (see Base Bid versus Alternate Number 1).
 6. Visual review of masonry, stucco, and metal wall surfaces at/directly above the counterflashings for minor, localized repairs.
 7. Visual review of wood trim, fascia, and soffits directly below edge metal/fascia for localized repairs/minor replacement and primer and two coats of paint.
 8. Remove all low-sloped roofing, insulation, components, and accessories to complete the identified repairs, modifications and replacements.
 9. Removal of all steep-sloped roofing, underlayment's, components, and accessories to complete the identified repairs, and modifications.
 10. Cut and completely remove existing coatings and sealants to provide all new sealant joints.
 11. Non-structural grinding, chipping, saw-cutting and cutting to the building envelope as required to complete the scope of work.
 12. Remove all materials, components or accessories required to complete the repairs, modifications and/or replacements.

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13. Cutting and patching to complete modification and repairs to include the following.
 - a. Modified bitumen roof system.
 - b. Thermoplastic roof system.
 - c. Abandoned equipment.
 - d. Drainage outlets to roofs.
 - e. LWIC/Gypsum Decking/Metal Form
 14. Remove all mechanical, electrical, and plumbing equipment to complete work and reinstall with new hardware, fasteners, and sheet metal closures/sealants.
 15. Any cutting and patching of structural elements to complete modifications and repairs shall not occur until notifications To Owner/Structural Engineer and approval as well as after proper shoring, bracing and secondary framing/support.
 16. Remove and replace work not conforming to requirements of the Construction Documents, defective or substandard work.
 17. Survey existing conditions, coordinate shutdowns, have qualified craftsmen disconnect necessary plumbing, mechanical and electrical components.
 18. 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 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement

- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- J. Section 07 60 00: Sheet Metal
- K. Section 07 72 00: Roof Accessories
- L. Section 07 73 15: Roof Drain Repairs/Modifications
- M. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

- A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI/ASSE Z359.1 (2016) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
- B. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code
 - 2. IEBC (2021) 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 platform and nailers.
 - b. Mechanical, electrical and communication equipment.
 - c. Metal decking.
 - d. LWIC / Gypsum fill.
 - e. Roof drains/overflow scuppers.
 - f. Metal form.
 - g. Metal roofing repairs.
 - h. Raise structural framing, curbs and mechanical equipment 8 inches above finished roof.
 - i. Metal framing/railing of platforms.
 - j. Structural members (steel, wood or concrete).
 - k. Maintain the lightning protection systems at all times.

B. Operational and Safety Limitations

1. This is an academic/medical training facility 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, penetrations, terminations, transitions, 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 33 00, 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 21 10, Unit Prices and Allowance, 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, lightning protection, pipes or other items on the exterior surfaces to permit complete cleaning and preparation of all surfaces.
 4. Demolition of the lightweight insulating concrete to complete repairs in accordance with Section 03 52 00, Lightweight Insulating Concrete/Gypsum Deck Repair (see Base Bid versus Alternate Number 1).
 5. Minor demolition of variations, imperfections and voids to complete repairs in accordance with Section 03 60 01, Concrete Grout Repair.
 6. 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/Replacement (see Base Bid versus Alternate Number 1).
 7. Demolition of rotted, deteriorated and/or damaged carpentry to permit replacement in accordance with Section 06 10 00, Rough Carpentry.
 8. Selective demolition to permit repairs to the existing roof systems in accordance with Section 07 50 00, General Roof Repairs/Maintenance.
 9. Complete removal of all roofing, insulation, vapor barrier 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.
 10. Removal of all other sheet metal components and accessories for replacement in accordance with Section 07 60 00, Sheet Metal.

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11. Removal of all accessories in accordance with Section 07 72 00, Roof Accessories.
 12. Removal of all other components and accessories for required repairs and modifications to drainpipe connectors in accordance with Section 07 73 15, Roof Drain Repairs/Modifications.
 13. 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 52 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. The lightning protection system shall be temporarily disconnected and removed, each day in the area of work, and reconnected at the end of that day. If any damages, missing components, or issues are encountered, contractor is to document and notify Owner/The BEE Group immediately.
 - G. Unit prices and set quantities are included for various items in accordance with Section 01 21 10, Unit Prices and Allowance 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 52 05: Safety Requirements
- C. Section 02 04 00: Cutting and Patching

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- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- J. Section 07 60 00: Sheet Metal
- K. Section 07 72 00: Roof Accessories
- L. Section 07 73 15: Roof Drain Repairs/Modifications
- M. 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 (2016) Safety Requirements for Demolition Operations
 - 2. ANSI/ASSE Z359.1 (2016) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
- C. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code
 - 2. IEBC (2021) 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 33 00, 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, expansion joints, 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.
 - 2. "Soft" barricades, interior signs and email notifications to occupants when working over entrances/exits.
- 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.
 - a. Ensure safety plan includes hurricane preparation and procedures for project.
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 exterior walls, fenestrations, grounds, 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. Concrete:
 1. Repair any deteriorated concrete and replace to provide a smooth, level, surface in accordance with Section 03 52 00, Lightweight Insulating Concrete/Gypsum Deck Repair and Section 03 60 01, Concrete Grout Repair.
- C. 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.

D. 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.

E. Substrates:

1. Repair any deteriorated substrates and replace to provide a smooth, level, surface per Section 03 52 00, Lightweight Insulating Concrete/Gypsum Deck Repair, Section 03 60 01, Concrete Grout Repair and secure rough carpentry in accordance with Section 06 10 00, Rough Carpentry.
2. After complete roof demolition, replace and/or prepare and coat sections of metal decking in accordance with Section 05 31 23, Metal Roof Deck Repair/Replacement.
3. After complete roof demolition, review concrete deck and notify Owner/Consultant of any deck issues that require repair/modification.

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 lightning protection, cables, wires, satellite or microwave dishes, antennas and rooftop mechanical, electrical or electronic components shall be temporarily disconnected and reconnected each day 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 21 10, Unit Prices and Allowance, 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 03 52 00

LIGHTWEIGHT INSULATING CONCRETE / GYPSUM DECK REPAIRS

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes all work necessary to remove and replace all damaged, deteriorated or otherwise unsuitable cast-in-place lightweight insulating concrete/gypsum (LWIC) fill on over various forms for the Base Bid.
- B. Work includes inspection, fastener pull tests and repair of the LWIC/Gypsum.
- C. 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 the Base Bid and not part of the unit price quantities.
- D. Repairs to form decking are not required within this project. If found, will address thru available allowance.
- E. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 60 01: Concrete Grout Repair
- E. Section 05 31 23: Metal Roof Deck Repair/Replacement
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 50 00: General Roof Repairs/Maintenance

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- H. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. Section 07 92 00: Sealants for Roofing and Sheet Metal

1.03 REFERENCES

A. AMERICAN CONCRETE INSTITUTION (ACI):

1. ACI 318 (2019) Building Code Requirements for Structural Concrete and Commentary
2. ACI RPMN (2013) Concrete Repair Manual
3. ACI MNL-2 (2019) Manual of Concrete Inspection

B. ASTM INTERNATIONAL (ASTM):

1. ASTM A185/A185M (2006) Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
2. ASTM C 138 / C 13 8M (2017) Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
3. ASTM C 150 / C 150 M (2022) Standard Specification for Portland Cement
4. ASTM C260/C260M (2016) Standard Specification for Air-Entraining Admixtures for Concrete
5. ASTM C33/C33M (2018) Standard Specification for Concrete Aggregates
6. ASTM C35-01(2019) Standard Specification for Inorganic Aggregates for Use in Gypsum Plaster
7. ASTM C317/C317M (2019) Standard Specification for Gypsum Concrete
8. ASTM C 332 (2017) Standard Specification for Lightweight Aggregates for Insulating Concrete
9. ASTM C495/C495M (2019) Standard Test Method for Compressive Strength of Lightweight Insulating Concrete

C. INTERNATIONAL CODE COUNCIL (ICC):

1. IBC (2021) International Building Code
2. IEBC (2021) International Existing Building Code

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Product data describing products and methods of mixing and application instructions.
- D. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 QUALITY ASSURANCE

- A. Insulating Concrete/Gypsum Supplier: Regularly engaged in production of lightweight insulating concrete/gypsum materials.
- B. Insulating Concrete/Gypsum Applicator: Regularly engaged and properly equipped for application of lightweight insulating concrete/gypsum, and as acceptable by aggregate producer.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original undamaged packages or acceptable bulk containers.
- B. Store packaged materials to protect them from elements or physical damage.
- C. Do not use cement that shows indications of moisture damage, caking, or other deterioration.

1.07 JOB CONDITIONS

- A. Do not place lightweight insulating concrete/gypsum when ambient temperature is at or below freezing (32 deg F, 0 deg C).
- B. When air temperature has fallen or is expected to fall below 40 deg F (4 deg C), heat water to a maximum 120 deg F (48 deg C) before mixing to attain lightweight concrete/gypsum at point of placement with temperature of 50 deg F (10 deg C) min. and 80 deg F (27 deg C) max.
- C. Do not place lightweight insulating concrete/gypsum on surfaces covered with standing water, snow, or ice.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use LWIC materials to repair existing LWIC decks and Gypsum materials for Gypsum decks.
 - 1. Light Weight Insulating Concrete
 - a. Portland Cement: ASTM C 150, Type I or Type III.
 - b. Mineral Aggregate: ASTM C 332, Group I.
 - c. Sand Aggregate: ASTM C 33.
 - d. Air-Entraining Admixture: ASTM C 260.
 - 2. Gypsum Concrete
 - a. Mill formulated complying with ASTM C 317, Class A, 500 psi minimum compressive strength.
 - b. Density of not more than 60 lbs/cu. Ft.
 - c. Calcined Gypsum – ASTM C 28
 - d. Aggregates – ASTM C 35
 - e. Wood chips or Shavings
 - 3. Reinforcing Mesh: Welded wire fabric, ASTM A 185, galvanized.
 - 4. Water: Clean, potable

2.02 DESIGN MIX

- A. General: Design lightweight insulating concrete mix to produce the following minimum physical properties.
 - 1. Wet Density at Point of Placement: Minimum 40 pcf, when tested in accordance with ASTM C 138.
 - 2. Oven-Dry Density: 22 to 30 pcf, when tested in accordance with ASTM C 495.
 - 3. Compressive Strength: Minimum 300 psi, when tested in accordance with ASTM C 495.
- B. The Portland cement to aggregate by volume ratio shall be 1:3.5, and a special mix ratio for non-venting substrates.
 - 1. A minimum compressive strength of 300 psi.

- C. Provide for minimum fastener pull out of 40 pounds per fastener.
- D. Do not exceed maximum air content recommended by aggregate manufacturer.
- E. Use minimum amount of water necessary to produce a workable mix.

2.03 MECHANICALLY FASTENED BASE SHEET

- A. In accordance with requirements of Section 07 55 27, Roof Replacement Modified Bitumen Sheet Roofing System.
- B. Fastening pattern shall be equivalent to Factory Mutual, FM-105 requirements for pattern with increases at corners and perimeters.

2.04 FASTENERS

- A. Use LWIC/Gypsum base sheet fasteners or other Owner approved fastener as required by specifications and manufacturers printed instructions.
- B. Provide for minimum fastener pull out of 40 pounds per fastener.
- C. Do not exceed maximum air content recommended by aggregate manufacturer.
- D. Use minimum amount of water necessary to produce a workable mix.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Lightweight concrete/gypsum decks suitable for re-roofing will be firm, hard and free of debris and loose dirt.
 - 1. Areas where roof leaking has been severe and long term may lose their integrity. These areas must be completely replaced with lightweight concrete.
- B. Conduct a minimum of six base sheet fastener pull tests for each roof area. LWIC substrate shall provide for minimum pull out of 40 pounds per fastener. Areas needing replacement due to deterioration must be completely cleaned of all loose, unsound concrete/gypsum.
 - 1. The area to be patched should be wetted down prior to placement of new concrete.
 - 2. Repair areas shall also meet the above pull test criteria.

3.02 PLACEMENT

- A. Patched areas should be allowed to cure sufficiently so that the material can be walked on without leaving footprints.
 - 1. This may necessitate covering the area to prevent water entry into the building.

- B. In some cases, lightweight decks may exhibit some surface spalling after the existing roof is removed. Generally, this surface spalling can be swept clean for application of the new roof.
 - 1. No remedial work is generally needed in this case.
- C. Place lightweight insulating concrete in accordance with manufacturer's instructions, using equipment and procedures to avoid segregation of mix and loss of air content.
 - 1. Deposit and screed in a continuous operation until an entire panel or section of roof area is completed.
 - 2. Do not vibrate or work mix except for screeding or floating.
 - 3. Place lightweight insulating concrete to fill voids of damaged and removed areas and to provide a level plane for roof system application.
 - 4. Leave top surface in acceptable condition to receive subsequent roofing application.
- D. Provide temporary protection of removable waterproof covering to prevent direct exposure to moisture if roofing application is not started immediately after completion of curing.

3.03 DEFECTIVE WORK

- A. General: Refinish or remove and replace lightweight insulating concrete/gypsum surfaces that are too rough to receive finish roofing, or where physical properties do not meet specified requirements, as determined by the Owner's Representative.

3.04 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, 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 03 52 00

SECTION 03 60 01

CONCRETE GROUT REPAIR

PART 1 - GENERAL

1.01 SUMMARY

- A. Work of this section includes inspection of and minor repairs and grouting to the concrete substrates after demolition, cleaning and before work begins.
 - 1. Repairs should be flush (or less than 1/4" thicker) with existing adjacent surfaces.
- B. Repair substrate where abandoned penetrations have been removed. Provide insulation to match existing condition and ensure underside of substrate at exposed locations match existing conditions.
- C. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 05 31 23: Metal Roof Deck Repair/Replacement
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 50 00: General Roof Repairs/Maintenance
- H. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 CONCRETE INSTITUTION (ACI):
 - 1. ACI 318 (2019) Building Code Requirements for Structural Concrete and Commentary
 - 2. ACI RPMN (2013) Concrete Repair Manual
 - 3. ACI MNL-2 (2019) Manual of Concrete Inspection
- C. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C 1107 / C 1107 M (2020) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
- D. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code
 - 2. IEBC (2021) International Existing Building Code
- E. PRESTRESSED CONCRETE INSTITUTE (PCI):
 - 1. PCI MNL-120 (2004) Design Handbook – Pre-cast and Pre-stressed Concrete

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, Submittals.
- B. No work will begin until all submittals have been received and approved and Pre-Construction Conference has been completed.
- C. Design Data
 - 1. Grout, Non-shrink
 - a. Provide product literature, data for proposed grout and its application.
- D. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Protect from weather and damage during storage and application.

PART 2 - PRODUCTS

2.01 NON-SHRINK, CEMENTITIOUS GROUT

- A. ASTM C 1107.
- B. Shall be a mixture of portland cement, sand and water.
- C. Proportion one-part cement to approximately 2.5 parts sand, with the amount of water based on placement method.

PART 3 - EXECUTION

3.01 SURFACE INSPECTION

- A. After roof demolition, check concrete substrate for damage, such as cracking, spalling, honeycombing or voids.
- B. Report damage to Consultant/Engineer.

3.02 REPAIR

- A. Joints:
 - 1. Closely inspect joints in concrete units to identify loose grouting.
 - 2. Rake out, clear away dust and debris and re-grout.
- B. Surfaces:
 - 1. All surfaces shall be smooth and uniform to receive new materials.
 - 2. Correct bearing surface irregularities with non-shrink grout.
 - 3. Major variations shall be immediately brought to the attention of the Consultant/Engineer.
- C. Grouting:
 - 1. Clean and fill indicated keyways between pre-stressed members, and other indicated areas, solidly with non-shrink grout or cementitious grout.
 - 2. Provide reinforcing where indicated.
 - 3. Remove excess grout before hardening.
- D. Sealants:
 - 1. Provide as indicated and as specified in Section 07 92 00, Sealants for Roofing and Sheet Metal.

3.03 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, 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 03 60 01

SECTION 05 31 23

METAL ROOF DECK REPAIR/REPLACEMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. The Base Bid contains requirements for minor, select replacement and/or deck coating repairs at deteriorated, randomly located sections of existing metal deck.
 - 1. Demolition of existing roofing, visual survey, preparation, priming and coating repair.
 - 2. Select cut-out and replacement (nesting).
- 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 the Base Bid and not part of the unit price quantities.
- C. Alternate Number 1 work includes complete removal and replacement of the deck assembly, and replacement with an intermediate rib, 22 gage galvanized steel metal deck mechanically fastened to the framing/joists in lieu of select repairs and replacement using the unit price quantities in the Base Bid.
- D. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 06 10 00: Rough Carpentry
- G. Section 07 50 00: General Roof Repairs/Maintenance
- H. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System

- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 A1008 / A1008M (2021) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable
 - 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 (2022) 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 (2021) International Building Code
 - 2. IEBC (2021) 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 33 00, 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 52 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 be equivalent to the Factory Mutual, FM-105 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 or rusted, 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. 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.
- D. Zinc-Coated Flat sheet for minor deck repairs to be 20-gage.
- E. Miscellaneous Steel Shapes: ASTM A 36.
- F. Shear Connectors: Headed stud type, ASTM A 108, Grade 1015 or 1020, cold finished carbon steel, with dimensions complying with AISC specifications.
- G. Shear Connectors: Strap type, ASTM A 1011 / A 1011 M, Grade D, hot-rolled carbon steel.
- H. Sheet Metal Accessories: ASTM A 653/A 653M, commercial quality, galvanized.
- I. Paint: Manufacturer's baked-on, rust-inhibitive paint, for application to metal surfaces that have been chemically cleaned and phosphate chemical treated.
- J. See requirements for charcoal filters and 'sniff' test in accordance with Section 01 50 00, Construction Facilities and Temporary Controls.

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.

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 21 10, Unit Prices and Allowance, 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

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. Prepare, prime and paint all fascia, soffit and trim on all sides (six) of wood before installing.
- D. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 in Section 01 21 10, Unit Prices and Allowance.

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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 07 50 00: General Roof Repairs/Maintenance

- H. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 (2018) National Design Specification for Wood Construction
- C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE):
 - 1. ASCE 7 (2016) 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 (2020) Use Category System: User Specification for Treated Wood
 - 2. AWPA M6 (2018) Brands Used on Forest Products
- F. APA – THE ENGINEERED WOOD ASSOCIATION (APA):
 - 1. APA E30 (2019) Engineered Wood Construction Guide
 - 2. APA E445 (2018) Performance Standards and Policies
 - 3. APA PS 1 (2020) Voluntary Product Standard for Construction and Industrial Plywood
 - 4. APA PS 2 (2019) Voluntary Product Standard for Wood-Based Structural-Use Panels

- G. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C 1396 / C 1396 M (2017) Standard Specification for Gypsum Board
 - 2. ASTM F 1667 (2019) Standard Specification for 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 (2021) International Building Code
 - 2. IEBC (2021) International Existing Building Code
- J. SOUTHERN PINE INSPECTION BUREAU (SPIB):
 - 1. SPIB 1003 (LATEST EDITION) Southern Pine Inspection Bureau Grading Rules
- K. U.S. DEPARTMENT OF COMMERCE (DOC):
 - 1. DOC/NIST PS1 (2019) Structural Plywood

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, 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 52 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, AWWA, U1.

PART 2 - PRODUCTS

2.01 LUMBER

- A. Framing Lumber: Nailers, framing edge strips, crickets, curbs and cants.
1. Wood cants are required, except at pre-fabricated curbs such as roof hatch/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.
- D. Plywood shall conform to DOC PS 1, APA PRP-108 or APA PS 2, Grade C-D or sheathing grade with exterior glue. Sheathing for roof and walls without corner bracing of framing shall have a span rating of 16/0 or greater for supports 16 inches on center and a span rating of 24/0 or greater for supports 24 inches on center.

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. Concrete Substrate
 - a. A minimum 1/2 inch diameter anchor bolt with a minimum 2 3/4 inch embedment and a minimum 1 inch diameter washer flush with concrete substrate and recessed into wood blocking.
 - b. Anchors should be staggered if blocking is wider than 6 inches.
 - c. Anchors should be not more than 48 inches on center and no less than three (3) anchors per 8 feet section of carpentry. At corners reduced to 24 inches on center.

2. 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.
3. 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 21 10, Unit Prices and Allowance, 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 50 00

GENERAL ROOF REPAIRS / MAINTENANCE

PART 1 - GENERAL

1.01 SUMMARY

A. Membrane Replacement

1. In areas/locations noted, remove the roof membrane and any wet insulation found. Provide coverboard/overlay, matching insulation thickness and provide new, repair with like materials, cold-applied, two-ply SBS, granular-surfaced modified bitumen roof system, mechanically fastened thermoplastic (PVC/TPO) roof system and fully adhered thermoset (EPDM) roof system.

B. Base Flashing Replacement

1. In areas/locations noted, remove base flashings and any wet materials and provide new cold-applied, two-ply SBS, granular-surfaced modified bitumen base flashing system, mechanically fastened thermoplastic (PVC/TPO) roof system and/or fully adhered thermoset (EPDM) roof system.

C. In locations/areas noted, prepare surfaces to provide a liquid applied, PMMA coating repair over the existing membrane and or flashing.

1. At drain, 4' x 4'.
2. At VTR/fixed pipe.
3. At pitch pans/curbs, in addition to removal/refitting and sheet metal hood.
4. At base flashings at terminations, complete repairs with like materials as existing or PMMA.

D. Remove all debris / vegetation from all roof areas indicated. Clean out drainage outlets of all debris on all roof areas.

E. Complete the specific repairs as indicated/noted on drawings. Any clarifications will be based on the NRCA/SPRI/ARMA Repair Manual for Low-Sloped Roofing and the technical specifications and drawings of the project.

F. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 STANDARD INSTITUTE (ANSI)
 - 1. ANSI/ASME A112.6.4 (2008) Roof, Deck and Balcony Drains
- C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
 - 1. ASTM D 4586 (2000) Asphalt Roof Cement, Asbestos-Free
 - 2. ASTM D 5147 / D 5147 M (2018) Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material
- D. AMERICAN WOOD PRESERVERS' ASSOCIATION (AWPA) PUBLICATIONS
 - 1. AWPA C1 (2000) All Timber Products
 - 2. AWPA C2 (2001) Standard for the Preservative Treatment of Lumber, Timber, Bridge Ties, & Mine Ties by Pressure Treatment
 - 3. AWPA M2 (2001) Standard for Inspection of Treated Timber Products
 - 4. AWPA M6 (2007) Brands Used on Forest Products

E. FEDERAL SPECIFICATIONS (FS)

1. FS QQ-L-201 Revision F, Amendment 2, Lead Sheet

F. INTERNATIONAL CODE COUNCIL (ICC):

1. IBC (2021) International Building Code
2. IEBC (2021) International Existing Building Code

G. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA)

1. NRCA Roofing and Waterproofing Manual, Sixth Edition
2. NRCA/ARMA/SPRI Repair Manual for Low Sloped Roof Systems.

H. SHEET METAL & AIR CONDITION NATIONAL CONTRACTOR'S 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.

I. SOUTHERN PINE INSPECTION BUREAU (SPIB)

1. PS 20-70 American Softwood Lumber Standard

1.04 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, 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 and Instructions: Include applicable materials descriptions and technical data sheets or catalog cuts.
 1. Modified bitumen membrane thermoplastic and thermoset membranes.
 2. Adhesive/mastic.
 3. Felts (inorganic base and fiberglass ply sheets).
 4. Primer.

5. Asphalt roof cement compatible with modified bitumen.
6. Fasteners.
7. Liquid-applied PMMA coating with reinforcing fabric.

D. Administrative or Close-out Submittals:

1. Warranty: Furnish warranty for repairs as provided in Section 01 77 05, Three Year Contractor Warranty.

E. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 QUALITY ASSURANCE

A. Qualification of Manufacturer:

1. The modified bitumen sheet roofing system manufacturer shall have a minimum of five (5) years experience in manufacturing modified bitumen roofing products in the United States.
2. Show evidence that specified products and materials are manufactured in the United States.

B. 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 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.

1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver materials in manufacturers' original, unopened containers and rolls with labels intact and legible.
2. Mark and remove wet materials from the site.
3. Where materials are covered by a referenced specification, the container shall bear the specification number, type and class, as applicable.
4. Deliver materials in sufficient quantity to allow work to proceed without interruption.

B. Storage:

1. Protect materials against moisture absorption.
2. Store roof materials on end on clean raised platforms or pallets one level high in dry locations with adequate ventilation, such as an enclosed building or closed trailer.
3. Do not store roof materials in buildings under construction until concrete, mortar and plaster work are finished and dry.
4. Maintain roof materials at temperatures above 50 degrees F for 24 hours immediately before application.
5. Do not store materials outdoors unless approved by Contracting Officer.
6. Completely cover rolled goods stored outdoors, on and off roof, with waterproof canvas protective covering.
 - a. Do not use polyethylene sheet as a covering.
 - b. Tie covering securely to the pallets to make completely weatherproof and yet provide sufficient ventilation to prevent condensation.
7. Do not store more materials on roof than can be installed the same day and remove unused materials at end of each day's work.
 - a. Distribute materials temporarily stored on roof to stay within live load limits of the roof construction.

C. Handling:

1. Select and operate material handling equipment so as not to damage applied roofing.
2. Prevent damage to edges and ends of roof materials.

1.07 ENVIRONMENTAL CONDITIONS

- A. Do not install roofing system when air temperature is below 40 degrees F, during any form of precipitation, including fog, or where there is ice, frost, moisture or any other visible dampness on the roof deck.
- B. Adhere to all local, state, and federal regulations pertaining to the disposal and removal of any materials, and the use and application of new materials.

1.08 PROTECTION OF PROPERTY

- A. Install protective coverings at paving and building walls adjacent to hoist and kettles prior to starting the work.

1. Lap protective coverings not less than six (6) inches, secure against the wind and vent to prevent collection of moisture on covered surfaces.
2. Keep protective coverings in place for the duration of the roofing work.

B. Flame-Heated Equipment:

1. Do not place flame-heated equipment on roof.
2. Provide and maintain a fire extinguisher adjacent to flame-heated equipment and on the roof.

C. Electric-Heated Equipment:

1. Provide adequate electrical service as required by manufacturer of electrical equipment to insure against damage to equipment and property and to insure proper application of roofing materials.

1.09 WARRANTY

- A. The contractor warranty shall be issued directly to the Owner and dated as noted below.
- B. Furnish the Three-Year Contractor Warranty as provided in Section 01 77 05, 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: Ensure in writing the roof manufacturer's existing warranty remains unchanged by the repairs.

PART 2 - PRODUCTS

2.01 DESCRIPTION OF ROOF REPAIR MATERIALS

- A. Modified Bitumen Sheet (for roofing and flashing): Surfacing to match existing, minimum 130 mils, tested in accordance with ASTM D5147-91.
- B. Base Sheet: Asphalt-coated glass fiber, meeting ASTM D 4601 / D 4601 M.
- C. Thermoset (EPDM), 60 mil, black membrane and uncured EPDM flashing material.
- D. Thermoplastic (PVC/TPO), 45 mil, white membrane.
- E. Liquid-Applied PMMA Coating
 1. Manufacturer's recommended reinforcing fabric/felt.

- F. Asphalt Roof Cement: ASTM D4586, asbestos free or manufacturer's approved cold-applied adhesive or mastic.
- G. Cant Strip: Wood Fiberboard type, meeting ASTM C208, or wood nailer, as noted, specified or necessary to complete the work.
- H. Accessories/Other Materials
 - 1. Felt: Glass fiber, asphalt saturated, meeting ASTM D2178, Type IV.
 - 2. Gravel: ASTM D1863 or D1864, for roof surfacing.
 - 3. Butyl Tape: Double-sided, partially cured tape, minimum 3/16 inch thick, 1 inch wide.
 - 4. Sealant: Urethane, non-sag, gray color.

2.02 LUMBER

- A. Framing Lumber:
 - 1. Air dry and kiln dry lumber.
 - 2. Kiln treated lumber after treatment.
 - 3. Maximum moisture content of wood products shall be as follows at the time of delivery to the job site. Framing lumber and boards - 19% maximum.
 - 4. Lumber and timber shall be treated in accordance with AWPA C1 and AWPA C2.
 - 5. All wood shall be air or kiln dried after treatment.
- B. Nailers, Edge Strips, Crickets, Curbs and Cants, as indicated or required.
 - 1. Minimum 2x6 nailers, and the overall thickness to match the insulation or existing materials.

2.03 OTHER MISCELLANEOUS COMPONENTS

- A. Lead Boots: 2.5-pound lead boots, minimum finished height of 8 inches and of size to fit pipe penetration properly.
- B. Fasteners, 8 inches on center, unless noted otherwise.
 - 1. For Felts or Modified Bitumen Flashing
 - a. 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.
 - b. Do not drive fasteners through top, horizontal surface of EPDM on parapet walls.

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.
 3. Metal Discs (Tin Caps):
 - a. Flat non-corrosive fasteners as recommended by the insulation manufacturer's printed instructions and meeting the requirements of FM A/S4470; not less than 3 inches in diameter, when using screw type fasteners.
 - b. Discs shall be formed to prevent dishing or cupping.
- C. Sheet Metal Materials:
1. Provide accessories and other items essential to complete the sheet metal installation.
 2. These accessories shall be made of the same material as the items to which they are applied (galvanized steel, galvalume stainless steel, aluminum or copper).
 - a. Use the same metal or a metal compatible with the item fastened or use stainless steel.

PART 3 - EXECUTION

3.01 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 counter flashing are installed as the work progresses.
- B. Demolition
 1. Old materials and surfacing shall be removed from areas to be repaired.
 2. Built-up roofs should be spudded back 18 inches to allow a proper tie-in width of 6 inches, minimum.
 3. All dirt, old sealants/repairs and other debris shall be removed before repairs are initiated.
 4. Use fasteners approved for wood treatment type.
- C. Wood Roof Nailers, Edge Strips, Curbs and Cants
 1. Provide sizes and configurations to match existing conditions at edge perimeters, curbs, and expansion joints.

2. Thicknesses to match insulation thicknesses.
3. Anchor securely to existing construction.

D. Priming of Surfaces:

1. 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.
2. Priming of Concrete and Masonry Surfaces:
 - a. After surface dryness requirements have been met, coat concrete and masonry surfaces, which are to receive new materials uniformly with a proper primer.
 - b. Allow the primer to dry prior to application of the base sheet, roofing and flashing.
3. Priming of Metal Surfaces:
 - a. Prime flanges of metal edging strips, metal flanges or lead flanges prior to stripping into the roofing system in accordance with the modified bitumen manufacturer's printed instructions and allow drying.

3.02 GENERAL ROOF 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. Do not permit phased construction, except where Modified Bitumen Base Sheet is used, and written approval and application requirements are provided by the manufacturer.
 3. Complete application of roofing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.
 4. Maintain the specified temperatures/environmental conditions for primers, adhesives, mastics and coatings.
 5. Provide temporary roofing and flashing as specified herein prior to the application of the permanent roofing system.
- B. Protection of Applied Roofing Against Moisture Absorption:
 1. At the end of the day's work and whenever is imminent, protect applied roofing system as follows.
 2. Water Cut-offs:
 - a. The insulation line shall be straightened using loose-laid cut insulation sheets and the terminated edge of the 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 adjoining roofing, 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.
3. 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 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.

3.03 GENERAL SHEET METAL APPLICATION

A. Requirements:

- 1. Match existing metal for all repairs as noted in drawings.
- 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 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.

B. Nailing:

- 1. Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches.
- 2. Confine nailing or flashing to one edge only. Space nails 3 inches on center, and staggered.
- 3. Face nailing will not be permitted.
- 4. Secure nailers a minimum 12 inches on center with a fastener attaining 200 #/LF.

C. Rivets and Screws:

- 1. Install where indicated or required.
- 2. Provide compatible fasteners and washers where required to protect surface of sheet metal and to provide a watertight connection.

D. Seams:

1. Lap Seams:

- a. Overlap seams of counterflashing not less than 3 inches.
- b. Completely and neatly fill the joints with the specified sealant, applied at not less than two - 1/8-inch-thick bed on each side of joint.

E. Reglets:

1. Care should be taken not to damage existing reglet/counterflashing when cutting counterflashing and installing new materials.
2. After completion of all base and counterflashing work is complete, the caulking of all reglets shall be completely removed, the area cleaned and new caulking installed, as specified.
3. Any damaged reglet shall be replaced to match existing.
4. Reglets to have a minimum depth of 1-1/4 inches.
5. New counterflashing to have a friction locking leg and shall use lead/copper wedges.

3.04 SPECIFIC INTERMEDIATE REPAIRS

A. Roof Membrane/Base Flashing Replacement

1. Damaged Flashing Replacement

- a. Remove all old and damaged membrane, flashing, repair materials and cant strip.
- b. In areas/locations noted, remove the roof membrane and any wet insulation found. Provide coverboard/overlay, matching insulation thickness and provide new cold-applied, two-ply SBS, granular-surfaced modified bitumen roof system.
- c. In areas/locations noted, remove base flashings and any wet materials and provide new cold-applied, two-ply SBS, granular-surfaced modified bitumen base flashing system.
- d. Where two-piece counterflashing exists, remove overlapping flange section and save for reinstallation.
- e. Where one-piece counterflashing exists, cut off overlapping flange leaving a 1-inch extension from wall.
 - 1) Form a 1/2-inch hemmed edge on the extension.
 - 2) A new piece of counterflashing shall have an interlocking, hemmed edge and screwed 18 inches on center when reinstalled.

- f. Remove existing metal coping, metal panels and hidden metal cover plates, taking care to prevent damage or bending to allow for reinstallation.
- g. Clean all surfaces of old repair materials.

2. Installation of New Flashing/Membrane

- a. General: Where noted, 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.
- b. Install new cant strip in a 1/8-inch-thick trowel bed of roof cement/mastic.
- c. Install base flashing consisting of a base felt and a modified bitumen flashing sheet. Set both sheets in continuous application of adhesive.
- d. Where counterflashing exists, carry both sheets a minimum of 4 inches out on the roof and 8 inches up the wall.
 - 1) Nail the top of the flashing sheets 9 inches on center.
- e. Where flashing intersects with the metal coping, carry the base fill 4 inches out on the roof and up to the top of the wall and terminate.
 - 1) Carry the flashing sheet a minimum of 4 inches out on the roof and up and over the parapet wall to the outer edge and fasten 9 inches on center along edge.
- f. Reinstall the counterflashing by attaching overlapping metal flange with hemmed edge and fastening 18 inches on center.
- g. Re-embed gravel/granular in manufacturer's adhesive.
- h. In locations/areas noted, prepare surfaces to provide a liquid applied, PMMA coating repair over the existing membrane and or flashing.
- i. At drain.
- j. At VTR/fixed pipe.
- k. At pitch pan.

3.05 PMMA REPAIRS

- A. At all locations, remove existing coatings, sealants, and mastics to provide a clean, uniform surface to apply primer and PMMA repair.

3.06 PITCH PANS

- A. Remove existing fill materials to provide non-shrink grout and 100% solids pourable sealer.

3.07 CLEAN UP

- A. Remove debris, scraps, containers and other rubbish and trash resulting from installation of the roofing system from job site each day.

3.08 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, 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 50 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 and LWIC/Gypsum roof decks shall be in accordance with FM 1A-120 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. Mechanically fastened base sheet and vapor barrier over the LWIC/Gypsum deck areas.
 - c. 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. Roof membrane base sheet shall be fully adhered in approved adhesive and cap sheet fully adhered in cold applied adhesive.
 - a. Adhesive/mastic shall be equivalent to Soprema's Colply EF Adhesive, Johns Manville DynaSet 1K, or Siplast SFT Cement in low odor and low VOC/no VOC.
 - b. Any other manufacturers/products shall be submitted as a substitution/variation request.
 6. Cap sheet side laps and end laps shall be heat welded (not torched).

- B. Roof Insulation assembly shall:
1. Provide a minimum 1-inch base layer and an average R-Value of 20 per roof area above the deck.
 2. Based on slopes provided with decks, ensure roof areas have a positive slope 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.
- C. Work in this section also includes base sheet/vapor barrier roof insulation for the modified bitumen roof membrane system, associated components and accessories over the existing roof deck.
1. Structurally sloped (primary slope) roof decks:
 - a. Provide added primary slope as indicated on the Tapered Roof Plan(s).
 - b. Properly attach/secure layer of polyisocyanurate roof insulation to the roof deck.
 - 1) Gang screw attachment is not permitted on structurally sloped roof decks unless required by manufacturer to meet the specified wind uplift system rating.
 - c. Provide secondary slope as indicated on the Tapered Roof Plan(s).
 - d. For all roof areas/levels, provide overlay/coverboard minimum thickness of 1/4-inch modified, gypsum roof coverboard installed/secured to attain the specified wind/ fire resistance.
 - e. 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 manufacturer's approved adhesive.
 - f. 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.
 2. Non-Structurally sloped roof decks:
 - a. Provide tapered insulation to achieve primary slope as indicated on the Tapered Roof Plan(s).

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- b. Properly attach/secure each layer of polyisocyanurate roof insulation to the roof deck.
 - 1) Gang screw attachment is not permitted on non-structurally sloped roof decks unless required by manufacturer to meet the specified wind uplift system rating.
 - c. Provide secondary slope as indicated on the Tapered Roof Plan(s).
 - d. For all roof areas/levels, provide overlay/coverboard minimum thickness of 1/4-inch modified, gypsum roof coverboard installed/secured to attain the specified wind/ fire resistance.
 - e. 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 manufacturer's approved adhesive.
 - f. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 60 00: Sheet Metal
- J. Section 07 72 00: Roof Accessories

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- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM C 208 (2022) Standard Specification for Cellulosic Fiber Insulating Board
 - 2. ASTM C 728 (2022) Standard Specification for Perlite Thermal Insulation Board
 - 3. ASTM C 1289 (2022) 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 (2021) 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 (2022) Standard Test Method for Surface Burning Characteristics of Building Materials
 - 9. ASTM E 108 (2020) Standard Test Methods for Fire Tests of Roof Coverings
- C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE):
 - 1. ASCE 7 (2016) 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 4450 (Latest Edition) Class 1 Insulated Steel Deck Roofs
 - 2. FM 4474 (Latest Edition) Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures

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3. FM AS 4470 (Latest Edition) Class I Roof Covers

4. FM P7825 (Latest Edition) Approval Guide

F. INTERNATIONAL CODE COUNCIL

1. IBC (2021) International Building Code

2. IEBC (2021) 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 1256 (Latest Edition) Standard for Fire Test of Roof Deck Constructions

4. UL 1897 (Latest Edition) Uplift Tests for Roof Covering Systems

5. UL BMD (Latest Edition) Building Materials Directory

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00, 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.

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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. Wood Nailers/Tapered Insulation
 - a. Show location and spacing of wood nailers that are required for securing insulation and for securing the roof membrane and flashing systems.
2. 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
3. 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 52 05, Safety Requirements.

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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.

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. Roof assembly shall have tested rating from FM 4450 (Class 1) or UL 1256 (pass) to meet IBC or a thermal barrier (1/2" gypsum) shall be required provided above metal deck/below insulation.
2. 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.
3. 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.

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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.

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.
- 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.

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 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. See Section 01 50 00, Construction Facilities and Temporary Controls, 1.03, for charcoal filters and "sniff" tests.
- C. 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.
- D. Control of fumes/odors:
 - 1. Use VOC-compliant, and when noted, use no VOC or low VOC products shall be utilized during construction.

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 77 05, 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.
 2. Over the nailable decks, provide mechanically fastened base sheet.
 3. Over non-nailable decks, provide adhesive attachment/securement of insulation layers.

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C. Substrate: Deck

D. Assembly

<u>Components</u>	<u>Quantity</u>
Base Sheet for LWIC/Gypsum	One-Ply
Vapor Barrier for LWIC/Gypsum	Two-Ply
Roof Insulations	As Specified
Adhesive/Mechanical Attachment (each layer)	As Specified
Overlay Board / Coverboard	As Specified
Adhesive	As Specified
SBS Modified Bitumen Base Sheet MB	1 ply
Manufacturer's Cold Adhesive	Per Manufacturer
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.
- b. Apply at rate in accordance with manufacturer's printed literature.
- c. Adhesives shall adhere to all VOC limitations and requirements (no VOC, low VOC and least odor producing products).

2. Roof membrane base sheet shall be fully adhered in approved adhesive and cap sheet fully adhered in cold applied adhesive.

- a. Adhesive/mastic shall be equivalent to Soprema's Colply EF Adhesive, Johns Manville DynaSet 1K, or Siplast SFT Cement in low odor and low VOC/no VOC.
- b. Any other manufacturers/products shall be submitted as a substitution/variation request.

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: 3/4-inch perlite or 3/4-inch HD fiber board, 4'x4' maximum size.
 - 1) Perlite Board: ASTM C 728, minimum 3/4 inch and adhere to wind and fire ratings.
 - 2) High Density fiber board, ASTM C 208, minimum 3/4 inch and adhere to wind and fire ratings.
- b. Use a coverboard in lieu the perlite or fiberboard overlay if required to attain the wind and fire ratings or warranty.
 - 1) Minimum 1/4-inch thick, 4'x4' for adhered applications, 4'x8' for mechanically fastened applications.
 - 2) 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.
 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 or off-white in color.
 2. ASTM D 6163, Type II or ASTM 6164, Type II 130 mils thick minimum.
 3. Heat welded side and end laps (not torched).
 4. External Class A, fire-rated sheet.
 5. 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.
 6. Head laps of field cap sheet shall 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. Accessories
1. Flashing Materials
 - a. 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.
 - b. Side laps secured and sealed in accordance with manufacturer's printed requirements.

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2. Primer: ASTM D 41.
3. Asphalt Roof Cement: ASTM D 4586 / D 4586 M, Type II for vertical surfaces; Type I for horizontal surfaces and compatible with membrane system.
4. 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.
5. 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.
6. Fasteners: Provide non-corrosive fasteners as recommended by the Modified Bitumen Sheet manufacturer's printed instructions and meeting the requirements of FM A/S4470.
 - a. 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.
 - b. Masonry Walls and Vertical Surfaces:
 - 1) Fasteners for Securing Felts, Modified Bitumen Sheets and Metal Items to Masonry Walls and Vertical Surfaces:
 - a) Hardened steel nails with flat heads, diamond shaped points and mechanically deformed shanks not less than one inch long.
 - b) Use power-driven fasteners only when approved in writing.
7. Metal Discs (Tin Caps):
 - a. 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.
 - b. Discs shall be formed to prevent dishing or cupping.
8. Walkpads:
 - a. 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.
 - b. Provide walkpads at all ingress/egress points and all access panels to mechanical equipment, spaced 12 inches apart to ensure proper drainage.
 - c. Also provide beneath/below non-penetrating supports and splash pans on roofs.

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9. Waterproof Underlayment
 - a. To be installed beneath all sheet metal components and accessories.
 - b. Smooth surfaced, self-adhering, polymer modified membrane, ASTM D 1970 / D 1970 M, and compatible with roofing system.

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. Nailable Decks:
 - a. Cover wood deck with a mechanically fastened base sheet.
 - b. Provide insulation assembly secured to attain required fire and wind ratings.
 - c. Apply insulation in layers required with staggered joints.

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- d. 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.
 - e. When using multiple layers of insulation, joints of each succeeding layer shall be parallel and offset in both directions with respect to layer below.
 - f. Keep insulation 1/2 inch clear of vertical surfaces penetrating and projecting from roof surface.
 - g. Firmly embed each layer of insulation in continuous application of approved adhesive.
 - 1) Walk boards in to ensure complete and proper adhesion.
 - 2) Fill all voids in excess of 1/4 inch with insulation.
8. Lightweight Insulating Concrete/Gypsum Deck:
- a. Cover lightweight insulating concrete decks with a coated glass base sheet.
 - b. Application of base sheet per NRCA and applicable FM criteria.
9. Concrete Deck:
- a. Solidly apply primer to poured, pre-cast concrete decks at the rate recommended by manufacturer.
 - b. Allow primer to dry thoroughly.
 - c. Place felt strips, 4 inches or more in width, over joints, 2 inches on each side, between pre-cast concrete units in a heavy coating of cold-applied asphalt roof cement.
10. 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. Firmly embed each layer of insulation in continuous application of 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).
- 7. Cants:
 - a. Cants are securely fastened in place in the angles formed by walls and other vertical surfaces.

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- 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 manufacturer's approved 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. After base sheet installation and vapor barrier, or after base sheet of roof membrane, add/fill low spots with a cut/trimmed sheet of smooth-surfaced modified bitumen sheet, fully adhered.
- B. Insulation
 - 1. All roof insulating materials shall be kept dry before, during and after installation.

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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.

C. 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.
 - d. Where tapered edge strips are installed against non-nailable materials, install/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 mastics 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. Stagger all insulation joints a minimum of 12" from adjacent boards and underlying boards.
 9. 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 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 adhesive bleed out, or open seams. Apply granules into bleed out of 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 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.
 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.

Roof Replacement Modified Bitumen Sheet Roofing System (With Insulation)

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- 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)

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**ROOF REPLACEMENT MODIFIED BITUMEN SHEET ROOFING SYSTEM
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 (for deck) / Vapor Barrier
 - a. System: _____
 - b. Materials: _____
 9. Base Sheet Application: One-Ply Two-Ply
 - a. Type: _____
 - b. Weight: _____
 - c. Method: (torched / mopped / hand / machine-nailed / cold-applied adhesive)
 - d. Manufacturer (Name / Address / Phone No.): _____

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

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

 14. Substantial Completion Date: _____
 15. Warranty Period: 20 Years
 16. Roofing Contractor (Name / Address / Phone No.): _____

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

- Contractor's Signature: _____ Date: _____

Roof Replacement Modified Bitumen Sheet Roofing System (With Insulation)

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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 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System

- J. Section 07 72 00: Roof Accessories
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 (2022) Test Standard for Edge Systems Used with Low Slope Roofing Systems
 - 2. ANSI/ASME A112.6.4 (2017) Roof, Deck and Balcony Drains
- C. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM A 167 (2009) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
 - 2. ASTM A 48 / A 48 M (2022) Standard Specification for Gray Iron Castings
 - 3. ASTM A 653/A 653M (2020) 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 (2022) Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process
 - 5. ASTM A924 / A924M (2022) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
 - 6. ASTM B 209 (2021) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 7. ASTM B 32 (2014) Solder Metal
 - 8. ASTM B 370 (2022) Copper Sheet and Strip for Building Construction
 - 9. ASTM B 69 (2016) Rolled Zinc
 - 10. ASTM D 1970 / D 1970 M (2021) 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 (2020) Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
 14. ASTM D 4637 (2015) 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 (2021) International Building Code
 2. IEBC (2021) International Existing Building Code
- F. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA):
1. NRCA Roofing and Waterproofing Manual, Fifth Edition.
 2. NRCA/ARMA/SPRI Repair Manual for Low Sloped Roof Systems.
 3. 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 33 00, 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.
2. New Drains

G. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 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.
 - b. Concealed items may be mill finish, except as noted below.
7. Exterior vertical face of sheet metal components shall extend a minimum of 1 1/2-inch below blocking/wall.

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)
- 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, minimum 36" x 36".
- D. Stainless Steel (for pitchpans / penetrations):
 1. ASTM A 167, Series 302 or 304, 22 gage and soldered for base. Tope can be 24 gage.

- E. Cleats:
 - 1. One (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. Do not use impact-driven or expansion fasteners. Use pre-drilled, screw-type fasteners.
 - 5. 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. Breathable Underlayment:
 - 1. A # 30 felt or approved equal.
- F. Butyl Tape:
 - 1. Double-sided butyl tape of width as required.
- G. Aluminum Termination Bar:
 - 1. One (1) inch x 1/8 inch thick with slotted holes a minimum of 6 inches on center.

H. Metal Wall Liner Panels:

1. Pre-finished, corrugated metal wall panels, minimum 24 gage, meeting metal criteria of this section.
2. Pre-finished, interlocking metal wall panels with hidden clips meeting metal criteria of this section.

I. New Roof Drains:

1. Provide new cast iron drain assembly and leader connection. The drain shall be an adjustable height drain configuration.
2. As a minimum, the drain shall adhere to the International Plumbing Code Requirements, meet ASTM A48, Class 25 and ANSI/ASME A112.6.4, Roof, Deck and Balcony Drains, and paint coated.
3. Assembly shall include cast iron drain bowl, clamping ring, metal strainer and stainless steel accessories required for complete installation. "No Hub" connectors are not acceptable.
4. Drain bowl connections to drain pipes shall be packed/filled with steel wool and leaded.

J. 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.

K. Stainless steel 1/4" minimum screen mesh with hemmed sheet metal at perimeters.

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 where 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. Lap Seams:

- a. Overlap seams of flashing not less than 4 inches, or as otherwise indicated.
- b. Completely and neatly fill the joints with two strips of 1/8 inch by 1/2-inch partially cured butyl tape or butyl sealant in an approved manner.

2. 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.

3. Drive Cleat:

- a. Minimum 1 1/2-inches wide.

4. Cover Plates:

- a. Raised Metal Edge: A minimum 6-inch wide cover, secured. Install double strips of butyl tape or butyl sealant under each side of joint.
- b. Edge Metal (Gravel Stop): A minimum 6 inches wide, and one-half inch longer than edge metal. Set in 1/16-inch thick bed of roof cement, two nails in center, and one at each corner.

5. Soldering:

- a. Soldering is required and shall be done in accordance with SMACNA criteria for all metals that can be soldered.

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. Any existing counterflashing specifically noted to be reused shall be carefully removed and stored until reinstallation.

2. All damaged sheet metal or missing metal, or material damaged during removal, which would restrict watertight application or provide unsightly appearance as determined by the Consultant/Engineer shall be replaced, at no cost, with new, matching materials.

3. Form the flashing to the required shapes before installation. Provide 4 inch vertical face, minimum, unless otherwise indicated.

4. Metal work shall adhere to details shown.

5. All inside and outside corners and termination pieces shall be shop fabricated.

6. Cleats and locking clips to be one gage/increment thicker than metal being attached.

B. Reglets:

1. Care should be taken not to damage existing reglet /counterflashing when cutting counterflashing and installing new materials.

2. All damaged sheet metal or missing metal, or material damaged during removal, which would restrict watertight application or provide unsightly appearance as determined by the Consultant/Engineer shall be replaced, at no cost, with new, matching materials.

3. After completion of all base and counterflashing work, the sealant of all reglets shall be completely removed, the area cleaned, and new sealant installed as specified in Section 07 92 00, Sealants for Roofing and Sheet Metal.
4. Any damaged reglet or counterflashing shall be repaired to match existing.
5. New reglets shall be cut 1-1/4 inch deep.
6. Sheet metal shall be fabricated with friction cleat and supplemented with lead wedge anchorage.

C. 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.

D. Cap Flashing

1. Install cap flashing curbing as indicated.
2. Provide continuous, firm support sloped using non hydroscopic materials to promote positive drainage.
3. Install waterproof underlayment over top of support construction and turn down vertical faces and up adjoining wall construction 3 inches, minimum.
4. Seal seams and laps in membrane liner.
5. Install sheet metal cap flashing with joints as indicated.

6. Terminate with prefabricated sheet metal closures.
7. Attach cap flashing as indicated with continuous cleats and screw fastening.

E. Embedded Edge Metal

1. Prefabricate in the shapes indicated.
2. Extend flange at least 4 inches on to roofing.
3. Provide a minimum 4 inch vertical face and extend a minimum 1 ½ inch over wall assembly.
4. At gutter locations, provide a minimum 4-inch vertical face, notched at each spacer, with a minimum 3-inch lap over gutter.
5. Joints methods shall be as indicated on drawings.
6. Prime bottom side of flange with primer and allow to dry.
7. Set primed flange in full bed of mastic/sealant on roof membrane and nail securely to wood nailer with appropriate fasteners a minimum of 1.5 inches long spaced not more than 4 inches on center and staggered.
8. Six (6) wide cover plate with hemmed edges set in two strips sealant/tape on each side of joint.
9. Provide polymer clad metal for welded membrane application.

F. Flashing at Roof Penetrations and Equipment Supports

1. Provide metal flashing for all pipes, ducts and conduits projecting through the roof surface and any equipment supports.
2. No pitch pans/pockets are to be used unless specifically detailed and indicated including a sheet metal umbrella.
3. Single Pipe Vents
 - a. Set primed flange of sleeve in a full bed of mastic/sealant and nail 4 inches on centers.
 - b. Bend the top of the sleeve down into the vent pipe a minimum of 1 inch.
 - c. Provide strip flashing of metal flange as specified and indicated.

G. Metal Wall Liner Panels:

1. Provide a minimum breathable weather resistant barrier / underlayment in watershedding fashion behind panels.

Sheet Metal
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2. Provide treated wood or metal furring as indicated or necessary to accomplish specified work. Fasten furring to wall with appropriate fasteners.
3. Provide and install wall panels.
 - a. Provide a bottom panel flashing shall be fabricated in a 2-piece condition to receive sheet metal counterflashing and shall be attached to wall with fasteners 12-inches on center.
 - b. Weather resistant barrier/ underlayment and the metal panels are to extend over the vertical leg of the bottom panel flashing a minimum of 3-inches.
 - c. Terminate the metal wall panels approximately 1-inch above the bottom panel flashing/ counterflashing receiver.
 - d. Provide and install wall panels using rubber gasket type stainless steel fasteners at top and bottom a maximum of 12-inches on center in between. Intermediate rows of fasteners should be spaced no more than 2 feet on center.
 - e. Metal coping/edge metal/counterflashing system to extend over top of metal wall panels a minimum 4-inches.
 - f. Taper metal wall panels to provide a constant base/counterflashing height of 12 inches.

H. 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.

I. Roof Expansion Joint:

1. Consists of curb with wood nailing members on each side of joint, with solid slope in one direction.
2. Provide as indicated in drawings and extend to perimeter edge.
3. A flexible vapor retarder and batt insulation shall fill the joint/gap.
4. Prior to installing sheet metal cap, install membrane liner over top of expansion curb and turned down minimum 3 inches each side.
5. Expansion joint cap flashing shall be attached as indicated.

J. Pitch Pans/Pitch Pockets

1. Pitch pans shall only be used in work where indicated on the drawings or approved by the Consultant/Engineer.
2. Existing pitch pan/pitch pockets shall be removed.
3. Mechanical/electrical/roof penetrations shall be disconnected and raised as required to provide proper flashing.
4. Pitch pan shall be fabricated from 20-ounce copper or 22-gage Series 302/304 stainless steel with all joints soldered or welded. A minimum 4-inch flange and 4 inch vertical height is required with one inch hemmed edge around top of entire pitch pan.
5. Bottom of pitch pan at deck shall be lined to permit pitch pan base to be filled with non-shrink grout. Prime inside of pitch pan before filling. The remaining portions of the pan shall be filled with pourable sealer adhered to walls of pan and penetration. Sealer shall be tapered to promote drainage.
6. A sheet metal umbrella or collar shall be fabricated to fit over the pitch pan and be sealed at penetration connection.

K. Mechanical Curbs

1. Provide new wood curb and prefabricated metal gravity vent base sized to receive throat of vent hood to be reused.
2. Rivet seams a minimum of one inch on center.
3. Solder all seams watertight.
4. Fasten to new wood curb using compatible fasteners at a maximum of 8-inches on center and a minimum of two fasteners per side.
5. All curbs shall provide a minimum base flashing height of 8 inches above finished roof membrane.

L. Self-Flashing Curbs/Bases

1. Where self-flashing curbs or penetration base is to be installed, provide new to match existing configuration and sized to fit component and allow for proper counterflashing installation.
2. Prime flanges prior to setting.
3. Anchor securely to decking.
4. Provide watertight membrane flashing.

M. Existing Vents, Hoods, and other Exposed Sheet Metal Components to Remain

1. Remove dirt and rust.
2. Prepare surface, prime and provide two (2) coats galvanized or aluminized paint compatible with material.

N. Scupper/Overflow Scupper:

1. Prefabricate scupper sleeve from minimum 16-ounce copper or 24 gage series 302/304 stainless steel.
2. Fabricate to ensure any seams in pan are positioned in top of scupper pan.
3. Solder all seams watertight.
4. Prime both sides of flanges prior to installation.
5. Set flanges in bed of sealant/adhesive.
6. Fasten and strip flash.
7. Provide sheet metal 'flaps', with Kynar finish to match exterior wall color.

8. Exterior Flashing/Collar
 - a. Fabricate collar from same metal as coping.
 - b. Provide 1/2-inch hemmed edge on all 4 sides.
 - c. Set collar in 2 strips of adhesive or butyl tape on all sides.
 - d. Secure in place with stainless steel fasteners.
 - e. Provide counterflashing above.

O. 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 21 10, Unit Prices and Allowance, 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

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SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes optional pre-manufactured accessories specified or as required to complete the work. Coordinate this section with Section 07 60 00, Sheet Metal.
- B. Based on the substitution process, prior to or afterwards, these accessories can be used in lieu of contractor fabricated items to include:
 - 1. Pipe Supports
 - 2. Mechanical and Electrical Supports
 - 3. Roof Vents

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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- J. Section 07 60 00: Sheet Metal
- K. Section 07 73 15: Roof Drain Repairs/Modifications
- L. 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 A10.3 (2006) Construction and Demolition Operations- Safety Requirements for Powder-Actuated Fastening Systems
 - 2. ANSI A14.3 (2002) Standard for Fixed Ladders and Safety Requirements
 - 3. ANSI Z359 (2007) Standard for Fall Protection
- C. AMERICAN WELDING SOCIETY, INC. (AWS):
 - 1. AWS D1.2 (2003) Structural Welding Code
- D. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code
 - 2. IEBC (2021) International Existing Building Code
- E. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA):
 - 1. NRCA Roofing and Waterproofing Manual, Fifth Edition.
 - 2. NRCA/ARMA/SPRI Repair Manual for Low Sloped Roof Systems.
- F. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA):
 - 1. 1910 (Latest Edition) Occupational Safety and Health Standards
 - 2. 1910.27 (Latest Edition) Fixed Ladders
 - 3. 1926 (Latest Edition) Safety and Health Regulations for Construction
- 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 33 00, 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 unless specifically approved otherwise.
 - 2. All details are based on NRCA Construction Details and SMACNA Architectural Sheet Metal Manual, Seventh Edition.
 - 3. Contractor shall provide shop drawings with the following information for all proposed substitutions, 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 proposed 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 accessory to be used on this project shall be provided at the Pre-Construction Conference.
- E. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 CONFORMANCE AND COMPATIBILITY

- A. The contractor shall ensure all proposed materials/accessories 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. 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

1. The contractor will notify the Consultant/Engineer immediately of any unforeseen site condition.
2. 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 MANUFACTURERS

A. Curbs/Supports

1. Thaler Metal Company
2. Portal Plus
3. Roof Products, Inc.

- B. Other products/manufacturers may be submitted under the substitution process prior to bidding or after award.

2.02 TYPES OF METALS

A. Steel Sheet, Galvalume (counterflashings and edge metals):

1. ASTM A 653 or ASTM A 792, G90 galvanized or AZ55 galvalume, 24 gage

B. Aluminum Sheet (counterflashings and edge metals):

1. ASTM B 209, .04 inches

- C. Copper (for pitchpans/penetrations/metal splash pans):
 - 1. ASTM B 370, cold rolled temper, 16 oz
- D. Stainless Steel (for pitchpans/penetrations/metal splash pans):
 - 1. ASTM A 167, Series 304, 24 gage.
- E. Use the same metal or a metal compatible with the item fastened when connecting to existing metal components specified in Section 07 60 00, Sheet Metal.

2.03 OTHER MATERIALS

- A. Fasteners:
 - 1. Fasteners shall be compatible with the materials being fastened and shall provide for secure, firm attachment and adhere to Section 07 55 27, Roof Replacement Modified Bitumen Sheet Roofing System and Section 07 60 00, Sheet Metal.
 - 2. Exposed fasteners shall have domed head with integral metal washer and rubber gasket.
 - 3. Stainless steel fasteners shall be used to connect dissimilar metals.
- B. Membrane Liner or Underlayment: Below Sheet Metal
 - 1. Minimum 40 mil, smooth surfaced modified bitumen meeting ASTM D 1970 / D 1970 M.
- C. Double-Sided Butyl Tape:
 - 1. Double-sided butyl tape of width indicated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General Requirements
 - 1. For installation of items or criteria not provided for the roof penetrations and flashings shall adhere to NRCA *Roofing and Waterproofing Manual*, 5th Edition, Construction Details.
 - 2. All sheet metal details shall adhere to guidelines set forth in SMACNA *Architectural Sheet Metal Manual*, Seventh Edition.
 - 3. A minimum distance of twelve (12) inches shall exist between any and all penetrations and/or terminations. A minimum distance of thirty (30) inches is recommended between a roof drain and an overflow drain to permit tapered insulation and proper flashing.

4. A minimum height of eight (8) inches above the finished roof is required for all flashings.
5. Use round shapes to construct equipment supports and avoid use of pitch pans, when possible. If used, include hood/umbrella over pitch pan. Use pourable sealers.
 - a. When existing pitch pans cannot be eliminated and preferred flashing methods utilized, ensure that the pitch pan is a preformed pan using copper or stainless with a minimum 4-inch height and four (4) inch flange, with two (2) inch clearance on all sides of the penetration. All laps and joints are to be soldered. The bottom one-third is to be filled with non-shrink grout with the remainder filled with pourable sealer, sloped to drain, and has a metal umbrella cap, when possible.
6. Equipment supports should be a minimum of fourteen (14) inches but not less than shown in the tables below. Note that these minimums apply at the end of the equipment support on the high side of the slope.

<u>WIDTH OF EQUIPMENT</u>	<u>HEIGHT OF LEGS (ROUND PIPE PREFERRED)</u>
Up to 25"	14"
25" to 37"	18"
37" to 49"	24"
49" to 61"	30"
61" and wider	48"

7. Coordinate M/E/P piping, supports and penetration requirements with this section as well as the drawings.

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. All materials to be reused shall be removed without damage and stored for protection until required.

6. 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.
7. Provide prefabricated inside and outside corners at all sheet metal intersection pieces.
8. Sheet metal shall be fabricated to conform to the contours of surfaces to which applied.
9. All sheet metal to have waterproof membrane underlayment installed behind or below the metal components.
10. Provide conforming sheet metal closures at all flashing termination conditions.
11. Provide accessories and fastenings as required to provide a securely attached, watertight construction.
12. Where sheet metal components are to be embedded in the built-up 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. Fasteners:

1. Confine nailing of sheet metal generally to sheet metal only where noted or specified.
2. Confine fastening of flashing to one edge only.
3. Space fasteners 4 inches on center and staggered or as otherwise indicated.
4. Face fastening 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 thicker.
3. Form with integral drip to engage sheet metal to be attached.

4. Attach securely at maximum 6 inches on center.
 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, unless otherwise noted.
 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 other end onto the newly installed counterflashing.
- G. Rivets and Screws:
1. Install where indicated or required.
 2. Provide compatible fasteners and washers where required to protect surface of sheet metal and to provide a watertight connection.
- H. Seams:
1. Lap Seams:
 - a. Overlap seams of flashing not less than 4 inches, or as otherwise indicated.
 - b. Completely and neatly fill the joints with two strips of 1/8 inch by 1/2 inch partially cured butyl tape or butyl sealant in an approved manner.
 2. Standing Seams:
 - a. Not less than 1 inch high, double locked without solder.
 - b. Coped side lap with two beads of butyl sealant for coping and cap flashing sheet metal.
 - c. Coping: As indicated.
 3. Drive Cleat:
 - a. Minimum 1-1/2 inches wide.
 4. Cover Plates:
 - a. Raised Metal Edge: A minimum 6-inch-wide cover, secured. Install double strips of butyl tape or butyl sealant under each side of joint.
 - b. Edge Metal (Gravel Stop): A minimum 6 inches wide, and one-half inch longer than edge metal. Set in 1/16-inch thick bed of roof cement, two nails fasteners in center.

5. Soldering:

- a. As required and per SMACNA criteria when applicable materials are used.

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 moisture proof membrane or felt as approved by Consultant/Engineer.

2. Wood or Other Absorptive Materials:

- a. Paint surfaces that may become repeatedly wet and in contact with metal with two coats of heavy bodied bituminous paint.

J. Expansion and Contraction:

- a. Provide expansion and contraction joints at not more than 40 foot intervals for metal.
- b. 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.
- c. Space joints evenly.

3.02 INSERT DRAINS

- A. Install per manufacturer's printed instructions.

3.03 SMALL AND LARGE PIPE/CONDUIT SUPPORTS

- A. Reuse existing supports but adjust based on new insulation thicknesses and add protective membrane layer under each support.
- B. Set on walkway/walkpad material 6 inches larger on all sides.
- C. NRCA equipment supports as required for large pipes.
- D. Spacing as required by manufacturer, add additional supports based on spacing required.

END OF SECTION 07 72 00

SECTION 07 73 15

ROOF DRAIN REPAIRS/MODIFICATIONS

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.
- B. These repairs and modifications shall be completed in accordance with the Contract Documents and any clarifications shall adhere to the below standards.
 - 1. NRCA Low-Sloped Roof Repair Manual, Fifth Edition.
- C. A set quantity is required as listed in Section 01 21 10, Unit Prices and Allowance. This quantity is to be included in the Base Bid as listed in Section 01 21 10, Unit Prices and Allowance. 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- J. Section 07 60 00: Sheet Metal
- K. Section 07 72 00: Roof Accessories
- L. 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/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 (2021) International Building Code
 - 2. IEBC (2021) International Existing Building Code
- G. NATIONAL ROOFING CONTRACTOR'S ASSOCIATION (NRCA):
 - 1. NRCA Roofing and Waterproofing Manual, Fifth Edition.
- H. 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 33 00, 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. 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.
- 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.

2. Insert Drains

3. New Drains

H. Safety Data Sheets (SDS): Submit Safety Data Sheets with each specification section and include with Safety Plan in accordance with Section 01 52 05, Safety Requirements.

1.05 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 of similar type to that specified.
- 2. Employ persons trained for installation of roof drains.

1.06 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.

1.07 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.

1.08 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.

1.09 WARRANTY

- A. Contractor and manufacturer warranties shall be exclusive and independent of each other. Each warranty shall be issued directly to the Owner and dated as noted below.
- B. Furnish the Three-Year Contractor Warranty as provided in Section 01 77 05, 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 the roof manufacturer's existing warranty remains unchanged by the repairs.
 2. Standard warranty 1 year on all roof drain products

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.
1. Zurn
 2. Smith
 3. Josam
- B. No Hub Connectors
1. Fernco, heavy duty, stainless steel.
 2. Myfab, 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 INSTALLATION

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

3.03 FLOOD TESTING

- A. Clean out debris and other materials from inside drain of pipe.
- B. Use inflated plumber's bubble, set inside pipe beyond/below 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.

3.04 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.

3.05 UNIT PRICED QUANTITIES

- A. In accordance with Section 01 21 10, Unit Prices and Allowance, 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 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 02 04 00: Cutting and Patching
- C. Section 02 05 00: Demolition and Removal
- D. Section 03 52 00: Lightweight Insulating Concrete/Gypsum Deck Repair
- E. Section 03 60 01: Concrete Grout Repair
- F. Section 05 31 23: Metal Roof Deck Repair/Replacement
- G. Section 06 10 00: Rough Carpentry
- H. Section 07 50 00: General Roof Repairs/Maintenance
- I. Section 07 55 27: Roof Replacement Modified Bitumen Sheet Roofing System
- J. Section 07 60 00: Sheet Metal
- K. Section 07 72 00: Roof Accessories
- L. Section 07 73 15: Roof Drain Repairs/Modifications

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 (2019) 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 (2022) Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width
- C. INTERNATIONAL CODE COUNCIL (ICC):
 - 1. IBC (2021) International Building Code
 - 2. IEBC (2021) 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 33 00, 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. Same or lighter than adjacent surfaces is required.
 - b. 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 52 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 subsection 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 minimum Class 35 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:

Joint Width

	Minimum	Maximum
Conc.	1/4"	1 1/2"
Masonry	1/4"	1 1/2"

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 21 10, Unit Prices and Allowance, 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

DRAWINGS

