UNIVERSITY OF SOUTH CAROLINA BEAUFORT
Beaufort Campus Roof Repairs
Project No: H36-9513
PLANS
July 30, 2013

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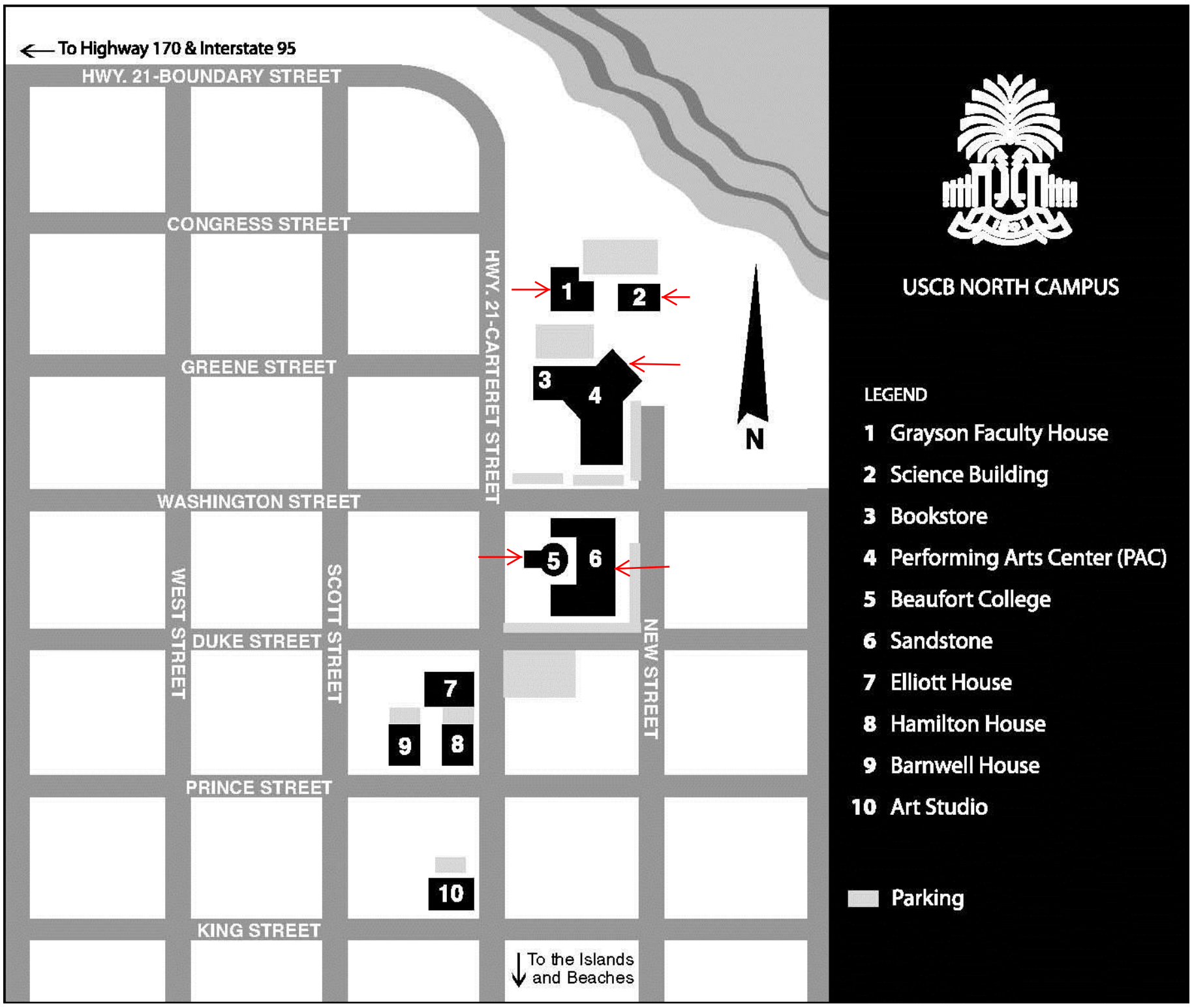

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University of South Carolina, Beaufort Campus

PROJECT NAME: USCB Beaufort Campus Roof Repairs

PROJECT NUMBER:_____H36-9513 _____

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****These American Institute of Architects Standard Form of Documents are hereby made a part of these documents to the same extent as if herein written out in full. The original of these AIA Documents are on file at the Office and Finance, 743 Greene Street, Columbia, South Carolina.***

DIVISION 01 GENERAL REQUIREMENTS

01 10 00	SUMMARY OF WORK
01 31 00	PROJECT MANAGEMENT AND COORDINATION
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01 45 23	TESTING AND INSPECTION SERVICES
01 50 00	CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
01 60 00	PRODUCT REQUIREMENT
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01 73 29	CUTTING AND PATCHING
01 74 00	CLEANING AND WASTE MANAGEMENT
01 77 00	CLOSEOUT REQUIREMENTS
01 78 00	CLOSEOUT SUBMITTALS
DIVISION 04	**MASONRY**
04 05 31	REPOINTING
DIVISION 06	**CARPENTRY**
06 10 00	ROUGH CARPENTRY
DIVISION 07	**THERMAL AND MOISTURE PROTECTION**
07 31 00	SHINGLES AND ROOFING TILES
07 55 00	MEMBRANE ROOFING
07 56 00	LIQUID APPLIED MEMBRANE
07 60 00	FLASHING AND SHEET METAL
07 92 13	SEALANTS
DIVISION 08	**DOORS AND WINDOWS**
08 11 13	HOLLOW METAL DOORS
08 71 00	DOOR HARDWARE

DIVISION 09 FINISHES

09 96 53 ELASTOMERIC COATINGS

09 91 00 PAINTING

DRAWINGS

USCB LIQUID-1, 2

USCB MBR-1,2

USCB REPAIRS-1,4

USCB SHINGLE-1,3

2011 Edition
Rev. 7/20/2011

SE-310
REQUEST FOR ADVERTISEMENT

PROJECT NAME: University of South Carolina Beaufort Campus Roof Repairs

PROJECT NUMBER: H36-9513

PROJECT LOCATION: USC Beaufort Campus, Beaufort south Carolina

Contractor may be subject to performance appraisal at close of project

BID SECURITY REQUIRED? Yes ☒ **No** ☐

PERFORMANCE & PAYMENT BONDS REQUIRED? Yes ☒ **No** ☐

CONSTRUCTION COST RANGE: $50,000 - $100,000

DESCRIPTION OF PROJECT: Repairs to and Replacement of roofing systems on the Beaufort Campus for the University of South Carolina Beaufort. Project includes roof repairs to the Grayson House, Sandstone Bldg., Beaufort College Bldg., Marine Science Bldg., Center for the Arts Bldg. Small and minority business participation is strongly encouraged.

A/E NAME: Essex Corporation

A/E CONTACT: Dwight H. Jones PE

A/E ADDRESS: Street/PO Box: 4611 Hardscrabble Road, Suite 109-364
City: Columbia
State: South Carolina ZIP: 29229-

EMAIL: djones@essexco.com

TELEPHONE: 803-873-9910 **FAX:** 803-873-9913

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

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: http://purchasing.sc.edu - Bidders are responsible for obtaining all updates to bidding documents from the USC Purchasing website.

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

Only those Bidding Documents/Plans obtained from the above listed source(s) are official. Bidders rely on copies of Bidding Documents/Plans obtained from any other source at their own risk.

BIDDING DOCUMENTS/PLANS ARE ALSO ON FILE FOR VIEWING PURPOSES ONLY AT *(list name and location for each plan room or other entity)***:**

http://purchasing.sc.edu (see facilities/Construction Solicitation & Awards); Bidders are responsible for obtaining all updates to bidding documents from the USC Purchasing website.

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

DATE: 8/27/2013 **TIME:** 11:00 am **PLACE:** Room 103, 802 Carteret St., Beaufort College Bldg, USCB Campus, Beaufort, SC 29902

AGENCY: University of South Carolina

NAME OF AGENCY PROCUREMENT OFFICER: Juaquana Brookins

ADDRESS: Street/PO Box: 743 Greene Street
City: Columbia
State: SC ZIP: 29208-

EMAIL: jbrookin@fmc.sc.edu

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

BID CLOSING DATE: 9/5/2013 **TIME:** 11:00 am **LOCATION:** Room 114, 802 Carteret Street, Beaufort College Bldg., USCB Campus, Beaufort, SC 29902.

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Ms. Nadine Robinson
University of South Carolina Beaufort
801 Carteret Street, Room 114
Beaufort, SC 29902

MAIL SERVICE:

Attn: Ms. Nadine Robinson
University of South Carolina Beaufort
801 Carteret Street, Room 114
Beaufort, SC 29902

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

2011 Edition

SE-310
Rev. 7/20/2011

REQUEST FOR ADVERTISEMENT

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

APPROVED BY *(Office of State Engineer)*: _____ **DATE:** _____

A701 – 1997 Edition

INSTRUCTIONS TO BIDDERS

(Replacement Page)

The Instructions to Bidders, AIA Document A701-1997 Edition, of the American Institute of Architects, is hereby made a part of these documents to the same extent as if herein written out in full.

Original AIA Document on file at the office

of Facilities Business and Finance

743 Greene Street, Columbia, SC

OSE FORM 00201

Revised October 22, 2012

STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

OWNER: University of South Carolina Beaufort
PROJECT NUMBER: H36-9513
PROJECT NAME: USC Beaufort Campus Roof Repairs
PROJECT LOCATION: USCB Beaufort Campus
Sandstone Building, 801 Carteret Street
Beaufort College Building, 801 Carteret Street
Center for the Arts, 805 Carteret Street
Grayson Faculty House, 807 Carteret Street
Marine Science, 809 Carteret Street
Beaufort, SC 29902

PROCUREMENT OFFICER: Ms. Juaquana Brookins

1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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

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

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

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

2. MODIFICATIONS TO A701-1997

2.1. *Delete Section 1.1 and insert the following:*

> **1.1** Bidding Documents, collectively referred to as the **Invitation for Bids**, include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement, Instructions to Bidders (A-701), Supplementary Instructions to Bidders, the bid form (SE-330), the Intent to Award Notice (SE-370), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda issued prior to execution of the Contract, and other documents set forth in the Bidding Documents. Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

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

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

2.4. *In Section 2.1.1:*

After the words "Bidding Documents," delete the word "or" and substitute the word "and."

Insert the following at the end of this section:
Bidders are expected to examine the Bidding Documents and Contract Documents thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements. Failure to do so will be at the Bidder's risk. Bidder assumes responsibility for any patent ambiguity that Bidder does not bring to the Owner's attention prior to bid opening.

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

and accepts full responsibility for any pre-bid existing conditions that would affect the Bid that could have been ascertained by a site visit. As provided in Regulation 19-445.2042(B), A bidder's failure to attend an advertised pre-bid conference will not excuse its responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the State.

2.6. *Insert the following Sections 2.2 through 2.6:*

2.2 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

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

(a) By submitting an bid, the bidder certifies that—

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to—

(i) Those prices;
(ii) The intention to submit an bid; or
(iii) 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 an bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory—

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid, and that the signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2)(i) Has been authorized, in writing, to act as agent for the bidder's principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification [As used in this subdivision (b)(2)(i), the term "principals" means the person(s) in the bidder's organization responsible for determining the prices offered in this bid];

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

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

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

2.3 DRUG FREE WORKPLACE

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

2.4 CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS

(a) (1) By submitting an Bid, Bidder certifies, to the best of its knowledge and belief, that-

(i) Bidder and/or any of its Principals-

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

(B) 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

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

(ii) Bidder has not, within a three-year period preceding this bid, had one or more contracts terminated for default by any public (Federal, state, or local) entity.

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

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

(c) If Bidder is unable to certify the representations stated in paragraphs (a)(1), Bid must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Bidder's responsibility. Failure of the Bidder to furnish additional information as requested by the Procurement Officer may render the Bidder nonresponsible.

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

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

2.5 ETHICS CERTIFICATE

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

2.6 RESTRICTIONS APPLICABLE TO BIDDERS & GIFTS

Violation of these restrictions may result in disqualification of your bid, suspension or debarment, and may constitute a violation of the state Ethics Act. (a) After issuance of the solicitation, ***bidder agrees not to discuss this procurement activity in any way with the Owner or its employees, agents or officials.*** All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed. (b) Unless otherwise approved in writing by the Procurement

Officer, ***bidder agrees not to give anything to the Owner, any affiliated organizations, or the employees, agents or officials of either, prior to award.*** (c) Bidder acknowledges that the policy of the State is that a governmental body should not accept or solicit a gift, directly or indirectly, from a donor if the governmental body has reason to believe the donor has or is seeking to obtain contractual or other business or financial relationships with the governmental body. Regulation 19-445.2165(C) broadly defines the term donor.

2.7. *Delete Section 3.1.1 and substitute the following:*

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

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

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

2.10. *Insert the following Section 3.1.5*

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

2.11. *In Section 3.2.2:*

Delete the words "and Sub-bidders"

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

2.12. *In Section 3.2.3:*

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

Insert the following at the end of the section:

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

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

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

2.14. *Delete Section 3.3.2 and substitute the following:*

3.3.2 No request to substitute materials, products, or equipment for materials, products, or equipment described in the Bidding Documents and no request for addition of a manufacturer or supplier to a list of approved manufacturers or suppliers in the Bidding Documents will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids established in the Invitation for Bids. Any subsequent extension of the date for receipt of Bids by addendum shall not extend the date for receipt of such requests unless the addendum so specifies. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

2.15. *Delete Section 3.4.3 and substitute the following:*

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

2.16. *Insert the following Sections 3.4.5 and 3.4.6:*

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

3.4.6. If an emergency or unanticipated event interrupts normal government processes so that bids cannot be received at the government office designated for receipt of bids by the exact time specified in the solicitation, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Addendum may be issued to reschedule bid opening. If state offices are closed at the time a pre-bid or pre-proposal conference is scheduled, an Addendum will be issued to reschedule the conference. Useful information may be available at: http://www.scemd.org/scgovweb/weather_alert.html

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

2.18. *Delete Section 4.1.2 and substitute the following:*

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

2.19. *Delete Section 4.1.3 and substitute the following:*

4.1.3 Sums shall be expressed in figures.

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

Bidder shall not make stipulations or qualify his bid in any manner not permitted on the bid form. An incomplete Bid or information not requested that is written on or attached to the Bid Form that could be considered a qualification of the Bid, may be cause for rejection of the Bid.

2.21. *Delete Section 4.1.5 and substitute the following:*

4.1.5 All requested Alternates shall be bid. The failure of the bidder to indicate a price for an Alternate shall render the Bid non-responsive. Indicate the change to the Base Bid by entering the dollar amount and marking, as appropriate, the box for "ADD TO" or "DEDUCT FROM". If no change in the Base Bid is required, enter "ZERO" or "No Change." For add alternates to the base bid, Subcontractor(s) listed on page BF-2 of the Bid Form to perform Alternate Work shall be used for both Alternates and Base Bid Work if Alternates are accepted.

2.22. *Delete Section 4.1.6 and substitute the following:*

4.1.6 Pursuant to Title 11, Chapter 35, Section 3020(b)(i) of the South Carolina Code of Laws, as amended, Section 7 of the Bid Form sets forth a list of subcontractor specialties for which Bidder is required to list only the subcontractors Bidder will use to perform the work of each listed specialty. Bidder must follow the Instructions in the Bid Form for filling out this section of the Bid Form. Failure to properly fill out Section 7 may result in rejection of Bidder's bid as non-responsive.

2.23. *Delete Section 4.1.7 and substitute the following:*

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

2.24. *Delete Section 4.2.1 and substitute the following:*

4.2.1 If required by the Invitation for Bids, each Bid shall be accompanied by a bid security in an amount of not less than five percent of the Base Bid. The bid security shall be a bid bond or a certified cashier's check. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

2.25. *Delete Section 4.2.2 and substitute the following:*

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

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

.2 Be issued by a surety company having, at a minimum, a "Best Rating" of "A" as stated in the most current publication of "Best's Key Rating Guide, Property-Casualty", which company shows a financial strength rating of at least five (5) times the contract price.

.3 Be enclosed in the bid envelope at the time of Bid Opening, either in paper copy or as an electronic bid bond authorization number provided on the Bid Form and issued by a firm or organization authorized by the surety to receive, authenticate and issue binding electronic bid bonds on behalf the surety.

2.26. *Delete Section 4.2.3 and substitute the following:*

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

2.27. *Insert the following Section 4.2.4:*

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

2.28. *Delete Section 4.3.1 and substitute the following:*

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

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

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

2.30. *Delete Section 4.4.2 and substitute the following:*

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

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

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

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

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

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

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

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

2.33. *Insert the following Sections 5.2.2 and 5.2.3:*

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

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

5.2.3 The Owner may reject a Bid as nonresponsive if the prices bid are materially unbalanced between line items or sub-line items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Owner even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

2.34. *Delete Section 6.1 and substitute the following:*

6.1 CONTRACTOR'S RESPONSIBILITY

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

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

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

2.37. *Insert the following Section 6.4*

6.4 CLARIFICATION

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

2.38. *Delete Section 7.1.2 and substitute the following:*

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

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

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

2.41. *Delete Section 7.2.1 and substitute the following:*

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

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

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

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

2.44. *Insert the following Article 9:*

ARTICLE 9 MISCELLANEOUS

9.1 NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING

IMPORTANT TAX NOTICE - NONRESIDENTS ONLY

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

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

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

PLEASE SEE THE "NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING" FORM (FORM NUMBER I-312) LOCATED AT: **http://www.sctax.org/Forms+and+Instructions/withholding/default.htm .**

9.2 CONTRACTOR LICENSING

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

9.3 SUBMITTING CONFIDENTIAL INFORMATION

For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that Bidder contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged & confidential, as that phrase is used in Section 11-35-410. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Bidder contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act. For every document Bidder submits in response to or with regard to this solicitation or request, Bidder must separately mark with the word "PROTECTED" every page, or portion thereof, that Bidder contends is protected by Section 11-35-1810. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire bid as confidential, trade secret, or protected! If your bid, or any part thereof, is improperly marked as confidential or trade

secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page. By submitting a response to this solicitation, Bidder (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, & documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, & (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure. In determining whether to release documents, the State will detrimentally rely on Bidders's marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED". By submitting a response, Bidder agrees to defend, indemnify & hold harmless the State of South Carolina, its officers & employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Bidder marked as "confidential" or "trade secret" or "PROTECTED".

9.4 POSTING OF INTENT TO AWARD

Notice of Intent to Award, SE-370, will be posted at the following location:
Room or Area of Posting: Reception Area
Building Where Posted: Facilities Center
Address of Building: 743 Greene Street, Columbia SC 29208
WEB site address (if applicable): http://purchasing.sc.edu (see Facilities/Construction Solicitation & 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

9.5 PROTEST OF SOLICITATION OR AWARD

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

(a) by email to protest-ose@mmo.sc.gov,
(b) by facsimile at 803-737-0639, or
(c) by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201.

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

9.6 SOLICITATION INFORMATION FROM SOURCES OTHER THAN OFFICIAL SOURCE

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

9.7 BUILDER'S RISK INSURANCE

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

9.8 TAX CREDIT FOR SUBCONTRACTING WITH MINORITY FIRMS

Pursuant to Section 12-6-3350, taxpayers, who utilize certified minority subcontractors, may take a tax credit equal to 4% of the payments they make to said subcontractors. The payments claimed must be based on work performed directly for a South Carolina state contract. The credit is limited to a maximum of fifty thousand dollars annually. The taxpayer is eligible to claim the credit for 10 consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return. Taxpayers must maintain evidence of work performed for a State contract by the minority subcontractor. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888. The subcontractor must be certified as to the criteria of a "Minority Firm" by the Governor's Office of Small and Minority Business Assistance (OSMBA). Certificates are issued to subcontractors upon successful completion of the certification process. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. Reference: SC §11-35-5010 – Definition for Minority Subcontractor & SC §11-35-5230 (B) – Regulations for Negotiating with State Minority Firms.

§ 9.9 OTHER SPECIAL CONDITIONS OF THE WORK

NONE

END OF DOCUMENT

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
University of South Carolina
743 Greene Street
Columbia, SC 29208

PROJECT:
USC Beaufort Campus Roof Repairs
University of South Carolina Beaufort
Beaufort Campus, Beaufort South Carolina
Project No: H36-9513

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

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

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

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

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

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

Signed and sealed this day of ,

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

SE-330 – LUMP SUM BID
BID FORM

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

BID SUBMITTED BY:_____
(Bidder's Name)

BID SUBMITTED TO: University of South Carolina, 743 Greene Street, Columbia, South Carolina 29208
(Owner's Name)

FOR PROJECT: PROJECT NAME USC Beaufort Campus Roof Repairs

PROJECT NUMBER H36-9513

OFFER

§ 1. In response to the Invitation for Construction Bids and in compliance with the Instructions to Bidders for the above-named Project, the undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with the Owner on the terms included in the Bidding Documents, and to perform all Work as specified or indicated in the Bidding Documents, for the prices and within the time frames indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

§ 2. Pursuant to Section 11-32-3030(1) of the SC Code of Laws, as amended, Bidder has submitted Bid Security as follows in the amount and form required by the Bidding Documents:

☐ Bid Bond with Power of Attorney ☐ Electronic Bid Bond ☐ Cashier's Check
(Bidder check one)

§ 3. Bidder acknowledges the receipt of the following Addenda to the Bidding Documents and has incorporated the effects of said Addenda into this Bid:

ADDENDUM No:_____

§ 4. Bidder accepts all terms and conditions of the Invitation for Bids, including, without limitation, those dealing with the disposition of Bid Security. Bidder agrees that this Bid, including all Bid Alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of 60 Days following the Bid Date, or for such longer period of time that Bidder may agree to in writing upon request of the Owner.

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

§ 6.1 BASE BID WORK ***(as indicated in the Bidding Documents and generally described as follows)*****:** USCB Beaufort Campus Roof Repairs: repairs to roofs and associated materials for the Sandstone Bldg, Beaufort College Bldg, and Center for the Arts Bldg, and replacement of roofs and repairs for Grayson Faculty House and Marine Science Bldg.

_____, which sum is hereafter called the Base Bid.
(Bidder - insert Base Bid Amount on line above)

SE-330 – LUMP SUM BID
BID FORM

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

ALTERNATE # 1 *(Brief Description)*: None

☐ **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)*: None

☐ **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)*: None

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

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

§ 6.2 UNIT PRICES – as indicated in the Bidding Documents and generally described as follows:

UNIT PRICE #1 For proper removal and disposal of asbestos-containing roofing materials from roofs covered with shingles.

$_____.__ per square foot

(Bidder to fill in the appropriate cost per unit offered. Unit cost to include all costs associated with this work.)

UNIT PRICE #2 For proper removal and disposal of asbestos-containing roofing materials from roofs covered with built-up roof, including modified bitumen.

$_____.__ per square foot

(Bidder to fill in the appropriate cost per unit offered. Unit cost to include all costs associated with this work.)

UNIT PRICE #3 For proper removal and disposal of asbestos-containing roofing materials from roofs covered with liquid-applied roofing membrane.

$_____.__ per square foot

(Bidder to fill in the appropriate cost per unit offered. Unit cost to include all costs associated with this work.)

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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 Specialty work listed:

SUBCONTRACTOR SPECIALTY **By License Classification and/or Subclassification** (Completed by Owner)	**SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME** (Must be completed by Bidder) **BASE BID**	**SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER**
None		
ALTERNATE 1		
ALTERNATE 2		
ALTERNATE 3		

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

INSTRUCTIONS FOR SUBCONTRACTOR LISTING

1. Section 7 of the Bid Form sets forth a list of subcontractor specialties for which bidder is required to identify by name the subcontractor(s)Bidder will use to perform the work of each listed specialty. Bidder must identify only the subcontractor(s) who will perform the work and no others.

2. For purposes of subcontractor listing, a Subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site. Material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the bidder or proposed subcontractor(s) are not subcontractors and Bidder should not insert their names in the spaces provided on the bid form. Likewise, Bidder should not insert the names of sub-subcontractors in the spaces provided on the bid form but only the names of those entities with which bidder will contract directly.

3. Bidder must only insert the names of subcontractors who are qualified to perform the work of the listed specialties as specified in the Bidding Documents and South Carolina Licensing Laws**.**

4. If under the terms of the Bidding Documents, Bidder is qualified to perform the work of a specialty listed and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.

5. If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word **"and"**. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**.

6. Bidder may not list subcontractors in the alternative nor in a form that may be reasonably construed at the time of bid opening as a listing in the alternative. A listing that requires subsequent explanation to determine whether or not it is a listing in the alternative is non-responsive. If bidder intends to use multiple entities to perform the work for a single specialty listing, bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word "**and**" between the name of each entity listed for that specialty. Owner will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word "or", a virgule (that is a /), or any separator that the Owner may reasonably interpret as a listing in the alternative.

7. If Bidder is awarded the contract, bidder must, except with the approval of the owner for good cause shown, use the listed entities to perform the work for which they are listed.

8. If bidder is awarded the contract, bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.

9. Bidder's failure to insert a name for each listed specialty subcontractor will render the Bid non-responsive.

SE-330 – LUMP SUM BID
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 Bids, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

a. CONTRACT TIME: Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within **90** calendar days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b. LIQUIDATED DAMAGES: Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the sum of $250.00for 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 sum 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 law of the State of South Carolina.

b. Bidder agrees that at any time prior to the issuance of the Notice to Proceed for this Project, this Project may be canceled for the convenience of, and without cost to, the State.

c. Bidder agrees that neither the State of South Carolina nor any of its agencies, employees or agents shall be responsible for any bid preparation costs, or any costs or charges of any type, should all bids be rejected or the Project canceled for any reason prior to the issuance of the Notice to Proceed.

§ 11. ELECTRONIC BID BOND

By signing below, the Principal is affirming that the identified electronic bid bond has been executed and that the Principal and Surety are firmly bound unto the State of South Carolina under the terms and conditions of the AIA Document A310, Bid Bond, included in the Bidding Documents.

Electronic Bid Bond Number: _____

Signature and Title: _____

SE-330 – LUMP SUM BID
BID FORM

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BIDDER'S TAXPAYER IDENTIFICATION

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER:_____

OR

SOCIAL SECURITY NUMBER:_____

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS

Classification(s)& Limits: _____

Subclassification(s) & Limits:_____

SC Contractor's License Number(s):_____

BY SIGNING THIS BID, THE PERSON SIGNING REAFFIRMS ALL REPRESENTATIONS AND CERTIFICATIONS MADE BY BOTH THE PERSON SIGNING AND THE BIDDER, INCLUDING WITHOUT LIMITATION, THOSE APPEARING IN ARTICLE 2 OF THE INSTRUCTIONS TO BIDDER. THE INVITATION FOR BIDS, AS DEFINED IN THE INSTRUCTIONS TO BIDDERS, IS EXPRESSLY INCORPORATE BY REFERENCE.

SIGNATURE

BIDDER'S LEGAL NAME: _____

ADRESS: _____

_____

BY:_____ **DATE:**_____
(Signature)

TITLE:_____

TELEPHONE:_____

EMAIL: _____

A101 – 2007 Edition

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

The Standard Form of Agreement Between Owner and Contractor, AIA Document A101 - 2007 Edition, of the American Institute of Architects, is hereby made a part of these documents to the same extent as if herein written out in full.

Original AIA Document on file at the office

of Facilities Business and Finance

743 Greene Street, Columbia, SC

OSE FORM 00501

Rev. 7/11/2011

STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

OWNER: University of South Carolina Beaufort
PROJECT NUMBER: H36-9513 CP
PROJECT NAME: USC Beaufort Campus Roof Repairs

1. STANDARD MODIFICATIONS TO AIA A101-2007

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

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

2. MODIFICATIONS TO A101

2.1. *Insert the following at the end of Article 1:*

Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

2.2. *Delete Section 3.1 and substitute the following:*

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

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

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

2.5. *Delete Section 5.1.3 and substitute the following:*

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

2.6. *In Section 5.1.6, Insert the following after the phrase "Subject to other provisions of the Contract Documents":*

and subject to Title 12, Chapter 8, Section 550 of the South Carolina Code of Laws, as amended (Withholding Requirements for Payments to Non-Residents)

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

2.7. *In Section 5.1.8, delete the word "follows" and the colon and substitute the following:*

set forth in S.C. Code Ann. § 11-35-3030(4).

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

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

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

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

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

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

Name: Mr Tom Opal
Title: Senior Project Manager
Address: 743 Greene Street, Columbia SC 29208
Telephone: (803) 777-7076 **FAX:** (803) 777-8739
Email: tnopal@fmc.sc.edu

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

Name: Mr. Dwight Cathcart
Title: Project Manager
Address: 743 Greene Street, Columbia SC 29208
Telephone: (803) 777-9824 **FAX:** (803) 777-8739
Email: dcathcar@fmc.sc.edu

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

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

Name: _____
Title: _____
Address: _____
Telephone: _____ **FAX:** _____
Email: _____

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

Name: _____
Title: _____
Address: _____
Telephone: _____ **FAX:** _____
Email: _____

2.14. *Add the following Section 8.6.1:*

8.6.1 The Architect's representative:

Name: Mr. Dwight Jones
Title: Vice President
Address: 4611 Hardscrabble Road, Suite 109-364
Telephone: 803-873-9910 **FAX:** 803-873-9913
Email: djones@essexco.com

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

Invitation for Construction Bids (SE-310)
Instructions to Bidders (AIA Document A701-1997)
Standard Supplemental Instructions to Bidders (OSE Form 00201)
Contractor's Bid (Completed SE-330)
Notice of Intent to Award (Completed SE-370)
Certificate of procurement authority issued by the SC Budget & Control Board

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

END OF DOCUMENT

AIA Document A201™ - 2007

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

(Replacement Page)

The General Conditions of the Contract for Construction, AIA Document A201-2007 Edition, of the American Institute of Architects, is hereby made a part of these documents to the same extent as if herein written out in full.

Original AIA document on file at the office of
Facilities Business and Finance
743 Greene Street, Columbia, SC

OSE FORM 00811
Rev. 9/7/2011

STANDARD SUPPLEMENTARY CONDITIONS

OWNER: University of South Carolina Beaufort
PROJECT NUMBER: H36-9513
PROJECT NAME: USC Beaufort Campus Roof Repairs

1 GENERAL CONDITIONS

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

2 STANDARD SUPPLEMENTARY CONDITIONS

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

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

3 MODIFICATIONS TO A201-2007

3.1 *Insert the following at the end of Section 1.1.1:*

Any reference in this document to the Agreement between the Owner and Contractor, AIA Document A101, or some abbreviated reference thereof, shall mean the AIA A101, 2007 Edition as modified by OSE Form 00501 – Standard Modification to Agreement Between Owner and Contractor. Any reference in this document to the General Conditions of the Contract for Construction, AIA Document A201, or some abbreviated reference thereof, shall mean the AIA A201, 2007 Edition as modified by OSE Form 00811 – Standard Supplementary Conditions.

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

3.3 *Add the following Section 1.1.9:*

1.1.9 NOTICE TO PROCEED
Notice to Proceed is a document issued by the Owner to the Contractor, with a copy to the Architect, directing the Contractor to begin prosecution of the Work in accordance with the requirements of the Contract Documents. The Notice to Proceed shall fix the date on which the Contract Time will commence.

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

In the event of patent ambiguities within or between parts of the Contract Documents, the contractor shall 1) provide the better quality or greater quantity of Work, or 2) comply with the more stringent requirement, either or both in accordance with the Architect's interpretation.

3.5 *Delete Section 1.5.1 and substitute the following:*

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

3.6 *Delete Section 2.1.1 and substitute the following:*

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, except as provided in Section 7.1.2. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's Representative. [Reference § 8.2 of the Agreement.]

3.7 *Delete Section 2.1.2 and substitute the following:*

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

3.8 *Delete Section 2.2.3 and substitute the following:*

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

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

"however, the Owner does not warrant the accuracy of any such information requested by the Contractor that is not otherwise required of the Owner by the Contract Documents. Neither the Owner nor the Architect shall be required to conduct investigations or to furnish the Contractor with any information concerning subsurface characteristics or other conditions of the area where the Work is to be performed beyond that which is provide in the Contract Documents."

3.10 *Delete Section 2.2.5 and substitute the following:*

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

3.11 *Add the following Sections 2.2.6 and 2.2.7:*

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

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

3.12 *Delete Section 2.4 and substitute the following:*

2.4 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect, including but not limited to providing necessary resources, with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

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

The Contractor acknowledges that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Owner.

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

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

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

Work, materials, or equipment not conforming to these requirements shall be considered defective. Unless caused by the Contractor or a subcontractor at any tier, the Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

3.17 *Insert the following at the end of Section 3.6:*

The Contractor shall comply with the requirements of Title 12, Chapter 9 of the South Carolina Code of Laws, as amended, regarding withholding tax for nonresidents, employees, contractors and subcontractors.

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

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

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

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

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

The amount of the Change Order shall reflect the difference between actual costs, as documented by invoices, and the allowances under Section 3.8.2.1.

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

acceptable to the Owner,

3.22 *Delete Section 3.9.2 and substitute the following:*

3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the name and qualifications of a proposed superintendent. The Owner may reply within 14 days to the Contractor in writing stating (1) whether the Owner has reasonable objection to the proposed superintendent or (2) that the

Owner requires additional time to review. Failure of the Owner to reply within the 14-day period shall constitute notice of no reasonable objection.

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

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

3.24 *Delete Section 3.10.3 and substitute the following:*

3.10.3 Additional requirements, if any, for the constructions schedule are as follows:
(Check box if applicable to this Contract))

☐ The construction schedule shall be in a detailed precedence-style critical path management (CPM) or primavera-type format satisfactory to the Owner and the Architect that shall also (1) provide a graphic representation of all activities and events that will occur during performance of the work; (2) identify each phase of construction and occupancy; and (3) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents and attached to the Agreement as Exhibit "A." If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The Contactor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. Whenever the approved construction schedule no longer reflects actual conditions and progress of the work or the Contract Time is modified in accordance with the terms of the Contract Documents, the Contractor shall update the accepted construction schedule to reflect such conditions. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

3.25 *Add the following Section 3.10.4:*

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

3.26 *Add the following Section 3.12.5.1:*

3.12.5.1 The fire sprinkler shop drawings shall be prepared by a licensed fire sprinkler contractor and shall accurately reflect actual conditions affecting the required layout of the fire sprinkler system. The fire sprinkler contractor shall certify the accuracy of his shop drawings prior to submitting them for review and approval. The fire sprinkler shop drawings shall be reviewed and approved by the Architect's engineer of record who, upon approving the sprinkler shop drawings will submit them to the State Fire Marshal or other authorities having jurisdiction for review and approval. The Architect's engineer of record will submit a copy of the State Fire Marshal's approval letter to the Contractor, Architect, and OSE. Unless authorized in writing by OSE, neither the Contractor nor subcontractor at any tier shall submit the fire sprinkler shop drawings directly to the State Fire Marshal or other authorities having jurisdiction for approval.

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

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

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

3.29 Add the following Sections 3.13.2 and 3.13.3:

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

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

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

including loss of use resulting therefrom,

3.31 *Delete Section 4.1.1 and substitute the following:*

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

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

Any reference in the Contract Documents to the Architect taking action or rendering a decision with a "reasonable time" is understood to mean no more than fourteen days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.

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

The Architect will visit the site as necessary to fulfill its obligation to the Owner for inspection services, if any, and, at a minimum, to assure conformance with the Architect's design as shown in the Contract Documents and to observe the progress and quality of the various components of the Contractor's Work, and to determine if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents.

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

On the basis of the site visits, the Architect will keep the Owner informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work.

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

Work completed and correlated with the

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

4.2.11 The Architect will, in the first instance, interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. Upon receipt of such request, the Architect will promptly provide the non-requesting party with a copy of the request.

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

If either party disputes the Architects interpretation or decision, that party may proceed as provided in Article 15. The Architect's interpretations and decisions may be, but need not be, accorded any deference in any review conducted pursuant to law or the Contract Documents.

3.38 *Delete Section 4.2.14 and substitute the following:*

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

3.39 *Delete Section 5.2.1 and substitute the following:*

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

3.40 *Delete Section 5.2.2 and substitute the following:*

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

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

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

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

3.43 *Add the following Section 5.2.5:*

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

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

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

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

§ 5.3.2 Without limitation on the generality of Section 5.3.1, each Subcontract agreement and each Sub-subcontract agreement shall include, and shall be deemed to include, the following Sections of these General Conditions: 3.2, 3.5, 3.18, 5.3, 5.4, 6.2.2, 7.3.3, 7.5, 7.6, 13.1, 13.12, 14.3, 14.4, and 15.1.6.

§ 5.3.3 Each Subcontract Agreement and each Sub-subcontract agreement shall exclude, and shall be deemed to exclude, Sections 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, of these General Conditions. In the place of these excluded sections of the General Conditions, each Subcontract Agreement and each Sub-subcontract may include Sections 13.2.1 and 13.6 and all of Article 15, except Section 15.1.6, of AIA Document A201-2007, Conditions of the Contract, as originally issued by the American Institute of Architects.

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

3.45 *Delete the last sentence of Section 5.4.1.*

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

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

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

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

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

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

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

3.49 *Delete Section 7.2.1 and substitute the following:*

7.2.1 A Change Order is a written instrument prepared by the Architect (using State Form SE-480 "Construction Change Order") and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;

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

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

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

7.2.3 At the Owner's request, the Contractor shall prepare a proposal to perform the work of a proposed Change Order setting forth the amount of the proposed adjustment, if any, in the Contract Sum; and the extent of the proposed adjustment, if any, in the Contract Time. Any proposed adjustment in the Contract sum shall be prepared in accordance with Section 7.2.2. The Owner's request shall include any revisions to the Drawings or Specifications necessary to define any changes in the Work. Within fifteen days of receiving the request, the Contractor shall submit the proposal to the Owner and Architect along with all documentation required by Section 7.6.

7.2.4 If the Contractor requests a Change Order, the request shall set forth the proposed change in the Work and shall be prepared in accordance with Section 7.2.3. If the Contractor requests a change to the Work that involves a revision to either the Drawings or Specifications, the Contractor shall reimburse the Owner for any expenditures associated with the Architects' review of the proposed revisions, except to the extent the revisions are accepted by execution of a Change Order.

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

3.51 *Delete 7.3.3 and substitute the following:*

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

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

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

3.52 *Delete Section 7.3.7 and substitute the following:*

7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall make an initial determination, consistent with Section 7.3.3, of the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.5. In such case, and also under Section 7.3.3.1.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work.

3.53 *Delete Section 7.3.8 and substitute the following:*

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

3.54 *Add the following Sections 7.5 and 7.6:*

7.5 AGREED OVERHEAD AND PROFIT RATES

7.5.1 For any adjustment to the Contract Sum for which overhead and profit may be recovered, other than those made pursuant to Unit Prices stated in the Contract Documents, the Contractor agrees to charge and accept, as full payment for overhead and profit, the following percentages of costs attributable to the change in the Work. The percentages cited below shall be considered to include all indirect costs including, but not limited to: field and office managers, supervisors and assistants, incidental job burdens, small tools, and general overhead allocations. The allowable percentages for overhead and profit are as follows:

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

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

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

7.6 PRICING DATA AND AUDIT

§ 7.6.1 Cost or Pricing Data.

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

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

§ 7.6.3 Records Retention.

As used in Section 7.6, the term "records" means any books or records that relate to cost or pricing data that Contractor is required to submit pursuant to Section 7.6.1. Contractor shall maintain records for three years from the date of final payment, or longer if requested by the chief procurement officer. The Owner may audit Contractor's records at reasonable times and places.

3.55 Delete Section 8.2.2 and substitute the following:

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

3.56 *Delete Section 8.3.1 and substitute the following:*

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the control of the Contractor and any subcontractor at any tier; or by delay authorized by the Owner pending dispute resolution; or by other causes that the Architect determines may justify delay, then to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and provided the delay (1) is not caused by the fault or negligence of the Contractor or a subcontractor at any tier and (2) is not due to unusual delay in the delivery of supplies, machinery, equipment, or services when such supplies, machinery, equipment, or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery, the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

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

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

3.58 *Delete Section 9.2 and substitute the following:*

9.2 SCHEDULE OF VALUES

9.2.1 The Contractor shall submit to the Architect, within ten days of full execution of the Agreement, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. As requested by the Architect, the Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible, such breakdown being submitted on a uniform standardized format approved by the Architect and Owner. The breakdown shall be divided in detail, using convenient units, sufficient to accurately determine the value of completed Work during the course of the Project. The Contractor shall update the schedule of values as required by either the Architect or Owner as necessary to reflect:

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

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

3.59 *Delete Section 9.3.1 and substitute the following:*

Monthly, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2., for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require (such as copies of requisitions from Subcontractors and material suppliers) and shall reflect retainage and any other adjustments provided in Section 5 of the Agreement. If required by the Owner or Architect, the Application for Payment shall be accompanied by a current construction schedule.

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

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

Insert the following at the end of Section 9.3.2:

The Contractor shall 1) protect such materials from diversion, vandalism, theft, destruction, and damage, 2) mark such materials specifically for use on the Project, and 3) segregate such materials from other materials at the storage facility. The Architect and the Owner shall have the right to make inspections of the storage areas at any time.

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

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

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

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

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

The Architect shall withhold a Certificate of Payment if the Application for Payment is not accompanied by the current construction schedule required by Section 3.10.1.

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

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

3.64 *Delete Section 9.7 and substitute following:*

9.7 FAILURE OF PAYMENT
If the Architect does not issue a Certificate for Payment to the Owner, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the time established in the Contract Documents the amount certified by the Architect or awarded by a final dispute resolution order, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased, in accordance with the provisions of Section 7.3.3, by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

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

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

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

3.67 *Delete Section 9.8.3 and substitute the following:*

9.8.3.1 Upon receipt of the Contractor's list, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, to determine whether the Work or designated portion thereof is substantially complete. The Contractor shall furnish access for the inspection and testing as provided in this Contract. The inspection shall include a

demonstration by the Contractor that all equipment, systems and operable components of the Work function properly and in accordance with the Contract Documents. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. If more than one Substantial Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor.

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

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

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

3.70 *Delete Section 9.10.1 and substitute the following:*

9.10.1 Unless the parties agree otherwise in the Certificate of Substantial Completion, the Contractor shall achieve Final Completion no later than thirty days after Substantial Completion. Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect, with the Owner and any other person the Architect or the Owner choose, will make an inspection on a date and at a time mutually agreeable to the Architect, Owner, and Contractor, and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. If more than one Final Completion inspection is required, the Contractor shall reimburse the Owner for all costs of reinspections or, at the Owner's option, the costs may be deducted from payments due to the Contractor. If the Contractor does not achieve final completion within thirty days after Substantial Completion or the timeframe agreed to by the parties in the Certificate of Substantial Completion, whichever is greater, the Contractor shall be responsible for any additional Architectural fees resulting from the delay.

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

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

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

If, after Substantial Completion of the Work, final completion thereof is delayed 60 days through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted.

3.73 *Delete Section 9.10.5 and substitute the following:*

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

3.74 Add the following Section 9.10.6:

9.10.6 If OSE has not previously issued a Certificate of Occupancy for the entire Project, the Parties shall arrange for a representative of OSE to participate in the Final Completion Inspection. Representatives of the State Fire Marshal's Office and other authorities having jurisdiction may be present at the Final Completion Inspection or otherwise inspect the completed Work and advise the Owner whether the Work meets their respective requirements for the Project.

3.75 *Delete Section 10.3.1 and substitute the following:*

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

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

In the absence of agreement, the Architect will make an interim determination regarding any delay or impact on the Contractor's additional costs. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15. Any adjustment in the Contract Sum shall be determined in accordance with Section 7.3.3.

3.77 *Delete Section 10.3.3 and substitute the following:*

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

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

In addition to its obligations under Section 3.18, the

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

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

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

3.81 *Delete 11.1.2 and substitute the following:*

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

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

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

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

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

3.82 *Delete Section 11.1.3 and substitute the following:*

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

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

Prior to commencement of the Work, and thereafter upon renewal or replacement of each required policy of insurance, Contractor shall provide to the Owner a signed, original certificate of liability insurance (ACORD 25). Consistent with this Section 11.1, the certificate shall identify the types of insurance, state the limits of liability for each type of coverage, name the Owner a Consultants as Certificate Holder, provide that the general aggregate limit applies per project, and provide that coverage is written on an occurrence basis. Both the certificates and the

endorsements must be received directly from either the Contractor's insurance agent or the insurance company. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, naming the Owner as an additional insured for claims made under the Contractor's completed operations, and otherwise meeting the above requirements, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

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

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

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

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

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

3.87 *Delete Section 11.3.2 and substitute the following:*

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

3.88 *Delete Section 11.3.3 and substitute the following:*

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

3.89 *Delete Section 11.3.4 and substitute the following:*

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

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

3.91 *Delete Section 11.3.6 and substitute the following:*

11.3.6 Before an exposure to loss may occur, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Owner.

3.92 Delete the first sentence of Section 11.3.7 and substitute the following:

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

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

A loss insured under the Contractor's property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Contractor as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10.

3.94 *Delete Section 11.3.9 and substitute the following:*

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

3.95 *Delete Section 11.3.10 and substitute the following:*

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

3.96 *Delete Section 11.4.1 and substitute the following:*

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

3.97 *Delete Section 11.4.2 and substitute the following:*

11.4.2 The Performance and Labor and Material Payment Bonds shall:

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

3.98 *Add the following Sections 11.4.3 and 11.4.4:*

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

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

3.99 *Delete Section 12.1.1 and substitute the following:*

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

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

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

unless otherwise provided in the Contract Documents.

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

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

3.103 *Delete Section 13.1 and substitute the following:*

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

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

13.2 SUCCESSORS AND ASSIGNS
The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole, or in part, without written consent of the other and then only in accordance with and as permitted by Regulation 19-445.2180 of the South Carolina Code of Regulations, as amended. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

3.105 *Delete Section 13.3 and substitute the following:*

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

.1 upon actual delivery, if delivery is by hand;
.2 upon receipt by the transmitting party of confirmation or reply, if delivery is by electronic mail, facsimile, telex or telegram;
.3 upon receipt, if delivery is by the United States mail.

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

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

Unless expressly provided otherwise,

3.107 *Add the following Section 13.4.3:*

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

1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service;
3.5 Warranty
3.17 Royalties, Patents and Copyrights
3.18 Indemnification
7.6 Cost or Pricing Data
11.1 Contractor's Liability Insurance
11.4 Performance and Payment Bond
15.1.6 Claims for Listed Damages
15.1.7 Waiver of Claims Against the Architect
15.6 Dispute Resolution
15.4 Service of Process

3.108 *Delete Section 13.6 and substitute the following:*

13.6 INTEREST
Payments due to the Contractor and unpaid under the Contract Documents shall bear interest only if and to the extent allowed by Title 29, Chapter 6, Article 1 of the South Carolina Code of Laws. Amounts due to the Owner shall bear interest at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.

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

3.110 *Add the following Sections 13.8 through 13.16:*

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

13.9 INTERPRETATION OF BUILDING CODES
As required by Title 10, Chapter 1, Section 180 of the South Caroline Code of Laws, as amended, OSE shall determine the enforcement and interpretation of all building codes and referenced standards on state buildings. The Contractor shall refer any questions, comments, or directives from local officials to the Owner and OSE for resolution.

13.10 MINORITY BUSINESS ENTERPRISES

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

13.11 SEVERABILITY

If any provision or any part of a provision of the Contract Documents shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

13.12 ILLEGAL IMMIGRATION

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

13.13 SETOFF

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

13.14 DRUG-FREE WORKPLACE

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

13.15 FALSE CLAIMS

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

13.16 NON-INDEMNIFICATION:

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

3.111 *Delete Section 14.1.1 and substitute the following:*

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

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

.2 An act of government, such as a declaration of national emergency that requires substantially all Work to be stopped.

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents and the Contractor has stopped work in accordance with Section 9.7

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

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

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

3.114 *Delete Section 14.2.1 and substitute the following:*

14.2.1 The Owner may terminate the Contract if the Contractor

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

.2 fails to make payment to Subcontractors for materials or labor in accordance with the Contract Documents and the respective agreements between the Contractor and the Subcontractors;

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

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

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

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

3.117 *Add the following Section 14.2.5:*

14.2.5 If, after termination for cause, it is determined that the Owner lacked justification to terminate under Section 14.2.1, or that the Contractor's default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Owner under Section 14.4.

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

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

3.119 *Delete Section 14.4.1 and substitute the following:*

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

3.120 *Delete Section 14.4.2 and substitute the following:*

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

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

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

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and

.4 complete the performance of the Work not terminated, if any.

3.121 *Delete Section 14.4.3 and substitute the following:*

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

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

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

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

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

.2 funding for the reinstated portion of the work has been restored;

.3 circumstances clearly indicate a requirement for the terminated work; and

.4 reinstatement of the terminated work is advantageous to the Owner.

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

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

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

3.124 *Delete Section 15.1.2 and substitute the following:*

15.1.2 NOTICE OF CLAIMS
Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Architect. Such notice shall include sufficient information to advise the Architect and other party of the circumstances giving rise to the claim, the specific contractual adjustment or relief requested and the basis of such request. Claims by either party arising prior to the date final payment is due must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later except as stated for adverse weather days in Section 15.1.5.2. By failing to give written notice of a Claim within the time required by this Section, a party expressly waives its claim.

3.125 *Delete Section 15.1.3 and substitute the following:*

15.1.3 CONTINUING CONTRACT PERFORMANCE
Pending final resolution of a Claim, including any administrative review allowed under Section 15.6, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will issue Certificates for Payment in accordance with the initial decisions and determinations of the Architect.

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

Claims for an increase in the Contract Time shall be based on one additional calendar day for each full calendar day that the Contractor is prevented from working.

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

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

.2 For the purpose of this Contract, a total of five (5) calendar 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. The remedy for this condition is for an extension of time only and is exclusive of all other rights and remedies available under the Contract Documents or imposed or available by law.

.3 The Contractor shall submit monthly with their pay application all claims for adverse weather conditions that occurred during the previous month. The Architect shall review each monthly submittal in accordance with Section 15.5 and inform the Contractor and the Owner promptly of its evaluation. Approved days shall be included in the next Change Order issued by the Architect. Adverse weather conditions not claimed within the time limits of this Subparagraph shall be considered to be waived by the Contractor. Claims will not be allowed for adverse weather days that occur after the scheduled (original or adjusted) date of Substantial Completion.

3.128 *Delete Section 15.1.6 and substitute the following:*

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

15.1.6.1 For the Owner, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) attorney's fees, (vii) any interest, except to the extent allowed by Section 13.6 (Interest), (viii) lost revenue and profit for lost use of the property, (ix) costs resulting from lost productivity or efficiency.

15.1.6.2 For the Contractor, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest, except to the extent allowed by Section 13.6 (Interest); (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waive as against the Owner. Without limitation, this mutual waiver is applicable to all damages due to either party's termination in accordance with Article 14. Nothing contained in this Section shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

3.129 *Add the following Section 15.1.7:*

15.1.7 WAIVER OF CLAIMS AGAINST THE ARCHITECT
Notwithstanding any other provision of the Contract Documents, including Section 1.2.1, but subject to a duty of good faith and fair dealing, the Contractor waives all claims against the Architect and any other design professionals who provide design and/or project management services to the Owner, either directly or as independent contractors or subcontractors to the Architect, for listed damages arising out of or relating to this Contract. The listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v)

attorney's fees, (vi) any interest; (vii) unamortized equipment costs; and, (viii) losses incurred by subcontractors for the types of damages the Contractor has waive as against the Owner. This mutual waiver is not applicable to amounts due or obligations under Section 3.18 (Indemnification).

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

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

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

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

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

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

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

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

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

15.6 DISPUTE RESOLUTION

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

15.6.2 If after meeting in accordance with the provisions of Section 15.6.1, the Senior Representatives determine that the dispute cannot be resolved on terms satisfactory to both the Contractor and the Owner, then either party may submit the dispute by written request to South Carolina's Chief Procurement Officer for Construction (CPOC). Except as otherwise provided in Article 15, all claims, claims, or controversies relating to the Contract shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or in the absence of jurisdiction a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the State regarding the Contract is not a waiver of either the State's sovereign immunity or the State's immunity under the Eleventh Amendment of the United State's Constitution.

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

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

15.6.5 SERVICE OF PROCESS

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

3.132 *Add the following Article 16:*

ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION

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

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

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

Remarks: _____

16.1.1 Contractor shall schedule and request inspections in an orderly and efficient manner and shall notify the Owner whenever the Contractor schedules an inspection in accordance with the requirements of Section 16.1. Contractor shall be responsible for the cost of inspections scheduled and conducted without the Owner's knowledge and for any increase in the cost of inspections resulting from the inefficient scheduling of inspections.

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

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

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

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

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

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

SE-355 2011 Edition

Performance Bond

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

Name: _____
Address: _____
_____

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

Name: _____
Address: _____
_____

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

Name: University of South Carolina
Address: 743 Greene Street
Columbia, SC 29208

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

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

State Project Name: USC Beaufort Campus Roof Repairs
State Project Number: H36-9513
Brief Description of Awarded Work, as found on the SE-330, Bid Form: USCB Beaufort Campus Roof Repairs: repairs to roofs and associated materials for the Sandstone Bldg, Beaufort College Bldg, and Center for the Arts Bldg, and replacement of roofs and repairs for Grayson Faculty House and Marine Science Bldg.

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

Name: Essex Corporation
Address: 4611 Hardscrabble Road, Suite 109-364
Columbia, SC 29229

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_____ BOND NUMBER _____
(shall be no earlier than Date of Contract)

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

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

Performance Bond

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

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency for the full and faithful performance of the contract, which is incorporated herein by reference

2. If the Contractor performs the contract, the Surety and the Contractor have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. The Surety's obligation under this Bond shall arise after:

3.1 The Agency has notified the Contractor and the Surety at the address described in paragraph 10 below, that the Agency is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If the Agency, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Agency's right, if any, subsequently to declare a Contractor Default; or

3.2 The Agency has declared a Contractor Default and formally terminated the Contractor's right to complete the Contract.

4. The Surety shall, within 15 days after receipt of notice of the Agency's declaration of a Contractor Default, and at the Surety's sole expense, take one of the following actions:

4.1 Arrange for the Contractor, with consent of the Agency, to perform and complete the Contract; or

4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Agency for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Agency and the contractor selected with the Agency's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the Agency the amount of damages as described in paragraph 7 in excess of the Balance of the Contract Sum incurred by the Agency resulting from the Contractor Default; or

4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and:

4.4.1 After investigation, determine the amount for which it may be liable to the Agency and, within 60 days of waiving its rights under this paragraph, tender payment thereof to the Agency; or

4.4.2 Deny liability in whole or in part and notify the Agency, citing the reasons therefore.

5. Provided Surety has proceeded under paragraphs 4.1, 4.2, or 4.3, the Agency shall pay the Balance of the Contract Sum to either:

5.1 Surety in accordance with the terms of the Contract; or

5.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

5.3 The balance of the Contract Sum due either the Surety or another contractor shall be reduced by the amount of damages as described in paragraph 7.

6. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond 15 days after receipt of written notice from the Agency to the Surety demanding that the Surety perform its obligations under this Bond, and the Agency shall be entitled to enforce any remedy available to the Agency.

6.1 If the Surety proceeds as provided in paragraph 4.4, and the Agency refuses the payment tendered or the Surety has denied liability, in whole or in part, then without further notice the Agency shall be entitled to enforce any remedy available to the Agency.

6.2 Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the Dispute Resolution process defined in the Contract Documents and the laws of the State of South Carolina.

7. After the Agency has terminated the Contractor's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Agency shall be those of the Contractor under the Contract, and the responsibilities of the Agency to the Surety shall those of the Agency under the Contract. To a limit of the amount of this Bond, but subject to commitment by the Agency of the Balance of the Contract Sum to mitigation of costs and damages on the Contract, the Surety is obligated to the Agency without duplication for:

7.1 The responsibilities of the Contractor for correction of defective Work and completion of the Contract; and

7.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

7.3 Damages awarded pursuant to the Dispute Resolution Provisions of the Contract. Surety may join in any Dispute Resolution proceeding brought under the Contract and shall be bound by the results thereof; and

7.4 Liquidated Damages, or if no Liquidated Damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. The Surety shall not be liable to the Agency or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Sum shall not be reduced or set-off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Agency or its heirs, executors, administrators, or successors.

9. The Surety hereby waives notice of any change, including changes of time, to the contract or to related subcontracts, purchase orders and other obligations.

10. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. Definitions

11.1 Balance of the Contract Sum: The total amount payable by the Agency to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts to be received by the Agency in settlement of insurance or other Claims for damages to which the Contractor 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
Rev. 8/9/2011

Labor and Material Payment Bond

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

Name: _____
Address: _____
_____

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

Name: _____
Address: _____
_____

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

Name: University of South Carolina
Address: 743 Greene Street
Columbia, SC 29208

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

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

Project Name: Beaufort Campus Roof Repairs
Project Number: H36-9513
Brief Description of Awarded Work, as found on the SE-330, Bid Form: USCB Beaufort Campus Roof Repairs: repairs to roofs and associated materials for the Sandstone Bldg, Beaufort College Bldg, and Center for the Arts Bldg, and replacement of roofs and repairs for Grayson Faculty House and Marine Science Bldg.

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

Name: Essex Corporation
Address: 4611 Hardscrabble Road, Suite 109-364
Columbia, SC 29229

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

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

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

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

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

SE-357

Rev. 8/9/2011

Labor and Material Payment Bond

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

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the Agency, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and

2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:

4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.

4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.

4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of o ne year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.

5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

5.2 Pay or arrange for payment of any undisputed amounts.

5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.

6. Amounts owed by the Agency to the Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the Contractor furnishing and the Agency accepting this Bond, they agree that all funds earned by the contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Agency's prior right to use the funds for the completion of the Work.

7. The Surety shall not be liable to the Agency, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Agency shall not be liable for payment of any costs or expenses of any claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

9. Notice to the Surety, the Agency or the Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the Agency or the contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

10. By the Contractor furnishing and the Agency accepting this Bond, they agree that this Bond has been furnished to comply with the statutory requirements of the South Carolina Code of Laws, as amended, and further, that any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

11. Upon request of any person or entity appearing to be a potential beneficiary of this bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

12. Any dispute, suit, action or proceeding arising out of or relating to this Bond shall be governed by the laws of the State of South Carolina.

13. **DEFINITIONS**

13.1 Claimant: An individual or entity having a direct contract with the Contractor or with a Subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and the Contractor's Subcontractors, and all other items for which a mechanic's lien might otherwise be asserted.

13.2 Remote Claimant: A person having a direct contractual relationship with a subcontractor of the Contractor or subcontractor, but no contractual relationship expressed or implied with the Contractor.

13.3 Contract: The agreement between the Agency and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

USC SUPPLEMENTAL
CONDITIONS FOR WORK AT HISTORIC BEAUFORT.

1. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies and stairs. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the building to the work area. Providing safe, accessible, plywood pedestrian ways around construction may be required if a suitable alternative route is not available.

2. Fraternization between Contractor's employees and USC students, faculty or staff is strictly prohibited - zero tolerance!

3. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to $500 per violation.

4. Contractor's employees must adhere to the University's policy of maintaining a drug-free and smoke-free/tobacco free workplace.

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

6. A welding permit must be issued by the Resident Safety Officer before any welding can begin inside a building. Project Manager will coordinate.

7. Contractor must notify the University immediately upon the discovery of suspect material such as those potentially containing asbestos or other such hazardous materials. These materials **must not** be disturbed until approved by the USC Project Manager.

8. At the beginning of the project, the USC Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractors work vehicles. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site that are not regular or authorized parking lots. Personal vehicles must be parked in the perimeter parking lots. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Note that access to freight lifts, wheelchair lifts, handicap parking spaces, and fire hydrants must be kept free at all times.

9. Contractor will be responsible for providing its own temporary toilet facilities.

10. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.

11. For all projects over $100,000, including IDC's, an SE-395, Contractor Performance Evaluation, will be completed by the USC Project Manager and reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed and a Construction Performance rating will be established.

12. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied at least one (1) times per week. Construction waste must not be placed in University dumpsters. The construction site must be thoroughly cleaned with all trash picked up and properly disposed of on a daily basis and the site must be left in a safe and sanitary condition each day. The University will inspect job sites regularly and will fine any contractor found to be in violation of this requirement an amount up to $1,000.00 daily per violation.

13. Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until this is completed.

14. Tree protection fencing is required to protect existing trees and other landscape features to be preserved within a construction area. The limits of this fence will be evaluated for each situation with the consultant, USC Arborist and USC Project Manager. The tree protection fence shall be 6' high chain link fence unless otherwise approved by USC Project Manager. No entry or materials storage will be allowed inside the tree protection zone. A 3" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone if USC Arborist determines that construction may decrease amount of moisture needed to sustain health of tree(s).

15. All large vehicle traffic to include cranes and material deliveries need to be coordinated with the USC Project Manager or designated official on site. Preferred access of such vehicles will be identified to the contractor as required before access will be granted. A path of minimum size must always be used and marked to reduce the damage to the lawn and landscaping. Items on the property damaged due to unnecessary vehicle traffic will be repaired or replaced at the contractor's expense.

16. Contractor shall water trees and other landscape material as directed by USC Arborist until site is returned to Owner.

17. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following measures shall be taken: For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over areas impacted. For single loads over 9,000 lbs., two layers of 3/4" plywood is required.

18. For projects requiring heavy loads to cross walks, tree root zones or lawns on a regular basis (as determined by USC Project Manager), a construction entry road consisting of 10'

X 16' oak logging mats placed on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep matting structurally functional.

19. Any damage to existing landscaping (including lawn areas) will be remediated at Contractor's expense before final payment is made.

20. Any damage to existing conditions will be remediated at the Contractor's expense at the time of such occurrence and before final payment.

21. All power outages or shut-downs for the transferring of electrical feeds to associated equipment are to be coordinated with the USC Project Manager and USC's on site staff. The Contractor is to provide a minimum of 72 hours notice and such work may be required to be done outside of regular working hours (after 4pm) or during the weekend in accordance with USC's requirements with ongoing activities occurring within the building during the duration of the project scope. If needed the Contractor is to prepare and provide a phasing plan associated with the anticipated electrical shut downs.

22. The interior spaces of the building are to be protected against storm water intrusion during the project duration. The Contractor is to prepare and provide a phasing plan associated with the sequencing of exposed areas of the roof or provide means of an effective secondary roofing system during the replacement of the existing roof assembly.

Contractor Vehicle Requirements on Campus

1. This project is located on USC historic Beaufort campus. All who access the site are subject to the rules and regulations of the campus. All motorized vehicles on the University campus are expected to travel and park on roadways and/or in parking stalls.

2. All motorized vehicles that leak or drip liquids are prohibited from entering the area. This is an environmentally protected campus. No fuel or other potentially hazardous material will be stored on site. All precautions and effort must be taken to ensure that such substances are not spilled when in use. All materials and containers must be removed from the site immediately and all areas must be cleaned at the end of each working day.

3. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated space. Parking and storage space will be designated by USC Project Manager, and or on site officials.

4. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held personally responsible for damages and restoration expense. Special previsions will be communicated to the contractor when traversing through single lane roads or one-way streets.

5. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.

6. All drivers of equipment and vehicles will be respectful of University landscape, equipment, structures, fixtures and signage.

7. All incidents of property damage will be reported to USC Project Manager, and or on site officials.

Project Name: **USCB Beaufort Campus Roof Repairs**

Project Number: **H36-9513**

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

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

Defects or failures resulting from abuse by Owner.

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

_____
[Name of Contracting Firm]

*By_____

Title_____

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

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

_____State

My commission expires _____

SECTION 01 10 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Work phases.
4. Work under other contracts.
5. Products ordered in advance.
6. Owner furnished products.
7. Use of premises.
8. Owner's occupancy requirements.
9. Work restrictions.
10. Specification formats and conventions.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: University of South Carolina at Beaufort.
1. Project Location: Beaufort, South Carolina.
2. Buildings included:
Sandstone Building, 801 Carteret Street
Beaufort College, 801 Carteret Street
Center for the Arts (CFA), 805 Carteret Street
Grayson Faculty House, 807 Carteret Street
Marine Science, 809 Carteret Street

B. Owner:
University of South Carolina Beaufort
743 Greene Street
Columbia, SC 29208
Tel: 803-777-9824
Fax: 803-777-8739
Contact: Mr. Dwight Cathcart, dcathcart@fmc.sc.edu

C. Engineer: Essex Corporation
4611 Hardscrabble Road, Suite 109-364
Columbia, South Carolina 29229
Tel: 803-873-9910
Fax: 803-873-9913
Contact: Dwight Jones, djones@essexco.com

E. End User:
University of South Carolina at Beaufort
One University Parkway
Bluffton, South Carolina 29909
Contact: Mr. Mike Parrott, mparrott@uscb.edu

F. Construction Manager: Duties to be performed by General Contractor.

G. Program Manager: Duties to be performed by Owner.

H. The Contract Documents include: Documents issued under the title block of Essex including the Project manual which includes Project Specifications and Drawings, all dated June 24, 2013.

1. Drawings and Specifications were prepared by and the work covered therein are the responsibility of the following:
    a. Essex Corporation

I. The work consists of the following:

1. The work includes:
    a. All roof repairs and replacements including removal of existing roofs where indicated and proper disposal. **The roofing materials to be removed during this project that contain asbestos will be identified during the Prebid Meeting. It will be the responsibility of the Contractor to remove and dispose of identified asbestos-containing materials in accordance with U.S. EPA and South Carolina DHEC regulations, and if materials are determined to contain asbestos, to properly remove and dispose of according to U.S. EPA and South Carolina DHEC regulations.**
    b. All carpentry associated with roof deck repairs as required.
    c. All coatings and repair of EIFS as indicated.
    d. All masonry repairs as indicated.
    e. All sheet metal repairs as indicated.
    f. All hollow metal door and door hardware installation as indicated.

USC Beaufort Campus Roof Repairs
Scope of Work by Building

Roof	System(s)	Repairs	Replace
Center for the Arts (CFA)	Standing Seam Metal	Caulking Flashing Rubber boots	None
Marine Science	Modified Bitumen (HVAC Deck) Shingles	Replace access door Roof deck Line set entries	Shingles and Low-slope roof & insulation
Beaufort College	Standing Seam Metal Modified Bitumen	Modified bitumen Rust treatment Parapet coping Cap	None
Sandstone Building	Ballasted BUR Ballasted Coal Tar Pitch	Modified bitumen Parapet sheet EIFS band Curbs	None
Grayson Faculty House	Shingles Liquid-applied membrane	Epoxy inject railing stanchions Repair dormer and chimney flashing	Shingles and Liquid-applied membrane

1.04 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.05 WORK PHASES

A. The Work shall be conducted in one phase delivered Summer/Fall 2013.

1.06 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with Owner's separate contractors or consultants, if any, so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

B. Preceding Work: None.

C. Concurrent Work:

1. An HVAC Contractor may be conducting Work replacing rooftop HVAC units on the roof of the Sandstone Building (801 Carteret Street) during part of this Contract. Coordinate with HVAC Contractor for repair and revision of equipment curbs in replacing rooftop HVAC units.

D. Future Work: None anticipated.

E. Concurrent and/or Future Work: None anticipated other than that Work described under paragraph C.

1.07 PRODUCTS ORDERED OR PURCHASED IN ADVANCE

A. None.

1.08 FURNISHED PRODUCTS OR SYSTEMS

A. None.

1.09 USE OF PREMISES

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

B. Use of Site: Limit use of premises to areas within the property limits indicated.

1. Limits: Materials lay down and storage and employee parking shall be as mutually agreed between Owner and Contractor.
2. Owner Occupancy: Allow for Owner occupancy of Project site.
3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    a. Schedule deliveries to minimize use of driveways and entrances.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.10 END USER’S OCCUPANCY REQUIREMENTS

A. End User’s Occupancy of buildings during Construction: The End User and its employees, vendors, and students shall occupy and the indicated buildings during the Work, provided such occupancy does not interfere with completion of the Work as mutually agreed between Owner and Contractor. Such occupancy shall not constitute acceptance of the total Work.

1.11 WORK RESTRICTIONS

A. On-Site Work Hours: GC to coordinate with USCB/BJHEC.

B. Nonsmoking Building: Smoking is not permitted within the building or within 10 feet of entrances, operable windows, or outdoor air intakes.

1.12 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help Cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
3. Reference made to material or products to match existing or pre-existing are subject to approval.

PART 2 _ PRODUCTS (Not Used)

PART 3 _ EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This section shall not be interpreted to relieve Contractor of his sole responsibility for supervision and coordination of all construction procedures as provided herein and in Contract Conditions.

B. Contractor requirements:

1. Be responsible for supervising and directing Work, using his best skill and attention.
2. Be solely responsible for all construction means, methods, techniques, sequences and procedures, and coordination of all portions of Work under Contract.
3. Be responsible for acts and omissions of his employees, subcontractors and their agents, and employees.

C. Contractor shall not be relieved from his obligation to perform Work complying with Contract Documents, either by activities of Owner or Engineer in his administrations of Contract or by inspections, tests, or approvals required to substantiate Contract compliance.

D. Provisions of this section are considered minimal for orderly and expeditious prosecution of Work.

E. Related Sections:

1. Section 013300: Submittal Procedures.
2. Section 014523: Testing and Inspection Services.
3. Section 016000: Product Requirements.
4. Section 017400: Cleaning and Waste Management.
5. Section 017700: Closeout Procedures.

1.03 ORDERING PRODUCTS

A. Before ordering materials, equipment, custom or standard fabricated items, verify the following provisions:

1. Each item complies with Contract Documents.
2. Each properly relates to Work already completed.
3. Shop drawings or other submittals confirm "1." and "2." above.
4. Orders are placed and delivery dates are established allowing orderly execution of Work on schedule and not allowing untimely delivery of critically sensitive products before Project site conditions are satisfactory to receive them.

1.04 COORDINATION AMONG TRADES

A. Initiate coordinating procedures at Project meetings before Work in field begins. Resolve scheduling, sequencing, interferences, and priorities of oncoming simultaneous Work among interested parties to achieve specified results, and to advance planned progress of Project.
B. Continue coordinating procedures by actively controlling Project conditions as follows:
    1. Verify products of all trades are stored in orderly fashion under conditions complying with manufacturer's instructions or specific requirements of relevant specification section whichever requirement is more stringent at planned locations.
    2. Verify compliance of environmental conditions before, during, and after execution of Work, with manufacturer's instructions and specific requirements of relevant sections of these specifications.
    3. Verify adherence to specified tolerances as Work progresses.
    4. Inspect job conditions before one trade follows another in compliance with these specifications:
        a. Plan joint inspections involving interested parties.
        b. Schedule inspections one week in advance, with notices sent to interested parties.
        d. Engineer will confine his observations to only limited areas; Contractor shall be responsible for continuing similar inspections to all areas involved.
        e. Review of job conditions, in part or in whole, by Engineer in no way relieves Contractor of his obligation to provide various stages of Work as well as finished Work complying with Contract Documents.
        f. Allowing Work to proceed over unsatisfactory conditions preventing execution of new specified Work is prohibited.
C. Continue coordinating efforts as Work progresses, verifying parties comply with decisions as agreed under Paragraphs A. and B. above. Make adjustments in planned procedures as changing job conditions require to achieve results specified to best advance progress of Work. Immediately advise all parties involved of required changes in construction schedule and planned procedure.

1.05 COORDINATION WITH RELATED WORK

A. Require all trades to cooperate with related Work as well as with those sections enumerated in Article 1.02 above.
B. Contractor and his Subcontractors: Coordinate Work with separate contract work by Owner, if applicable, and with prior occupancy provisions required by Owner.

1.06 TRAFFIC MAINTENANCE AND CIRCULATION

A. General:
    1. Maintain circulation of traffic, both pedestrian and vehicular, and access to all parts of site by fire-fighting apparatus during construction.

2. Access to site is from public streets. Confine parking and vehicle access as directed by Owner to accommodate operation of existing tenants.
3. Obtain offsite parking required for construction.
4. Access to occupied areas will be restricted during construction unless prior approval is obtained from Owner.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 31 00

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 RELATED REQUIREMENTS:

A. Section 01 33 00: Submittal Procedures.

B. Pre-installation conferences: Individual Specifications Sections.

1.03 PRE'CONSTRUCTION MEETING:

A. The Owner will schedule a pre-construction conference in a timely manner.

B. Attendance:
1. Owner or his appointed representative.
2. Engineer (and his professional consultants he deems appropriate).
3. Contractor and his superintendent.
4. Others required by the Owner and the Engineer.

C. Agenda:

1. Submittal of executed bonds and insurance certificates.
2. Distribution of Contract Documents.
3. Submittal of:
    a. List of subcontractors.
    b. List of products.
    c. Schedule of values.
    d. Progress schedule.
4. Designation of responsible personnel.
5. Procedures and processing of:
    a. Field decisions.
    b. Submittals.
    c. Substitutions.
    d. Applications for payment.
    e. Proposal requests.
    f. Change orders.
    g. Contract closeout procedures.
6. Scheduling.

1.04 PROJECT MEETINGS:

A. Schedule and administer monthly progress meetings, called meetings, and pre-installation meetings throughout the progress of the Work.
   1. Make physical arrangements for meetings.
   2. Prepare agenda for meetings.
   3. Distribute written notice of each meeting seven days in advance of meeting date.
   4. Preside at meetings.
   5. Record the minutes.
   6. Reproduce and distribute copies of minutes within three days after each meeting. Provide one copy to all participants in the meeting, and all parties affected by decisions made at the meeting. Furnish three copies to the Engineer.

B. Location of the meetings: To be determined in coordination with Owner's representative.

C. Attendance:
   1. Owner or his appointed representative.
   2. Engineer (and his professional consultants he deems appropriate).
   3. Contractor.
   4. Contractor's job superintendent.
   5. Subcontractors as appropriate to the agenda.
   6. Suppliers as appropriate to the agenda.
   7. Others.
   8. Representatives of contractors, subcontracts and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.
   9. Developer or his appointed representative.

D. Minimum Agenda:
   1. Approval of minutes of previous meeting.
   2. Review of work in progress.
   3. Field observations, problems and decisions.
   4. Identification of problems which impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Coordination of projected schedules.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on progress schedule and coordination.
   13. Project safety.
   14. Site Cleanup.
   15. Other business relating to the work.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 31 19

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. General Provisions:
1. Provisions in this section are mandatory procedures for preparing and submitting samples, shop drawings, and product data.
2. Job delays occasioned by requirement of resubmission of samples, shop drawings and product data not in accord with Contract Documents are Contractor's responsibility, and will not be considered valid justification for extension of time.

1.03 PREPARATION

A. Samples:
1. Prepare samples in sizes, shapes, and finishes in accord with provisions of individual specification sections.
2. Samples furnished under this section are not to be confused with full size, on the site "Mock-Ups" called for in some specification sections.
3. Number of samples submitted: Number required by Contractor, plus one which will be retained by Engineer unless otherwise indicated.
4. Samples requiring color selection:
a. Submit at earliest practicable time.
b. No color selections will be made until colors can be chosen and issued at one time in form of color schedule.
c. Approvals and color selections will not be made unilaterally where samples or selections regarding adjacent materials must be made for aesthetic purposes.

B. Shop Drawings:
1. Conform to the following requirements:
a. Number sheets consecutively.
b. Indicate working and erection dimensions and relationships to adjacent work.
c. Indicate:
1) Arrangements and sectional views, as applicable.
2) Material, gauges, thicknesses, finishes and characteristics.
3) Anchoring and fastening details: include information for making connections to adjacent work.

d. Indicate working and erection dimensions and relationships to adjacent work. Concurrent submittals of different aspects of work may be required by Owner’s representative as deemed necessary to demonstrate Contractor's ability to understand these relationships and coordinate Work.
e. Provide 6 in. by 6 in. clean space in the lower right hand area for entry of the Contractor's, Owner’s representative, and Engineer's stamps.
f. Cross reference drawing details and specification paragraphs applicable to submitted data.

2. Submit copies of shop drawings. Provide number of copies as follows:
    a. Number required by Contractor for coordination and execution of Work.
    b. One copy for Owner's file.
    c. One copy for Engineer.

C. Product Data:

1. Include product manufacturer's standard printed material, dated, with product description and installation instructions indicated: delete data not required to this Project or mark "Void" as applicable.
2. Number of copies submitted: Number required by Contractor plus two which will be retained by Owner’s representative and Engineer.
3. Quality control submittals: Submit from manufacturers for each product indicating materials supplied or installed are asbestos free.

1.04 REVIEW

A. Contractor's:
1. Review submittals and stamp with approval action stamp containing Contractor's name, word "Approved", signed initials of approving agent, date of approval action, review notes, comments, and corrections required prior to submission to Owner’s representative.
2. By so noting, Contractor indicates that he has reviewed and approves materials, equipment, quantities, and dimensions represented by particular submittal.
3. Contractor represents by submitting samples, shop drawings, and product data that he has complied with provisions specified above.
4. Submissions made without Contractor's approval indicated thereon will be returned without being reviewed for compliance with this requirement.
5. Date each submittal: indicate name of Project, Engineer, Contractor, Sub-Contractor, as applicable, description or name of equipment, material, or product and identify Work use location.
6. Accompany submittal with transmittal letter containing project name, Contractor's name, number of samples or drawings, titles, and other pertinent data. Outline deviations, if any, in submittals from requirements of Contract Documents.

B. Owner’s Representative:
1. Review submittals with reasonable promptness to cause no delay in Work.

2. Review is only for conformance with design concept of project and information in Contract Documents. Review of separate item shall not indicate approval of an assembly in which item functions.
3. Owner's representative will return submittals to Contractor for distribution.

C. Engineer's shop drawing stamp contains the following information:

SUBMITTAL REVIEW

APPROVAL IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION GIVEN IN THE CONTRACT DOCU_ MENTS. CONTRACTOR IS RESPONSIBLE FOR DIMEN_ SIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE; INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESS OR TO THE MEANS AND METHOD OF CONSTRUCTION; COORDINATION OF THE WORK OF ALL TRADES; AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER. THIS APPROVAL DOES NOT MODIFY CONTRACTOR'S DUTY TO COMPLY WITH THE CONTRACT DOCUMENTS.

APPROVED ☐

APPROVED AS NOTED ☐

REVISED AND RESUBMIT ☐

REJECTED ☐

NOT REQUIRED FOR REVIEW ☐

ESSEX CORPORATION

ATLANTA, GA 30319

Date_____ By_____

1.05 RESUBMISSION

A. Make corrections and changes indicated for unapproved submissions: resubmit in same manner as specified above until Owner's representative approval is obtained.
B. Direct specific attention to revisions other than corrections requested by Owner's representative on previous submissions, if any, in resubmission transmittal.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 33 00

SECTION 01 45 23

TESTING AND INSPECTON SERVICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Owner shall employ and pay for services of independent testing laboratory to perform specified services and testing.

B. Related Requirements:

1. Conditions of the Contract: Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities.

1.03 TESTING LABORATORY

A. Qualifications:

1. Meet "Recommended Requirements for Independent Laboratory Qualification" published by American Council of Independent Laboratories.
2. Meeting basic requirements of ASTM E329'00b, "Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction."
3. Authorized to operate in State in which Project located.
4. Submit copy of Inspection Report of Facilities made by Materials Reference Laboratory of National Bureau of Standards during most recent tour of inspection, with memorandum of remedies of deficiencies reported by inspection.
5. Testing equipment, calibrate at reasonable intervals by devices of accuracy traceable to either:
    a. National Bureau of Standards.
    b. Accepted values of natural physical constants.

B. Duties:

1. Cooperate with Owner’s representative and Contractor: provide qualified personnel after due notice.
2. Perform necessary inspections, sampling, and testing of materials and methods of construction.
    a. Comply with specified standards.
    b. Ascertain compliance of materials with requirements of Contract Documents.
3. Promptly notify Owner’s representative and Contractor in writing of observed irregularities or deficiencies of work or products.

4. Promptly submit five copies of written report of each test and inspection to Owner's representative Include on each report:
    a. Date issued.
    b. Project title and number.
    c. Testing laboratory name, address, and telephone number.
    d. Name and signature of laboratory inspector.
    e. Date and time of sampling or inspection.
    f. Record of temperature and weather conditions.
    g. Date of test.
    h. Identification of product and specification section.
    i. Location of sample or test in Project.
    j. Type of inspection or test.
    k. Results of tests and compliance with Contract Documents.
    l. Interpretation of test results, when requested by Owner's representative.
5. Perform additional tests required by Owner's representative.

C. Limitations: Laboratory is not authorized to:
1. Release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Approve or accept any portion of Work.
3. Perform duties of Contractor.

1.04 CONTRACTOR

A. Responsibilities:
1. Cooperate with laboratory personnel; provide access to Work, and manufacturers operations.
2. Secure and deliver to laboratory adequate quantities of representative samples of materials proposed requiring testing.
3. Provide laboratory preliminary design mix proposed for concrete and other materials mix requiring control by Testing Laboratory.
4. Furnish required copies of products test reports.
5. Furnish incidental labor and facilities:
    a. To provide access to Work to be tested.
    b. To obtain and handle samples at Project site or at source of product to be tested.
    c. To facilitate inspections and tests.
    d. For storage and curing of test samples.
6. Notify laboratory sufficiently in advance of operations to allow laboratory assignment of personnel and scheduling of tests.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 45 23

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 FACILITIES

A. Temporary Lighting:

1. Provide adequate lighting levels to complete work as construction progresses or as required by local code for works in attics.
2. Extend and maintain lighting and related systems required by construction progress.

B. Temporary Ventilation:

1. Provide adequate ventilation for work to progress and meet Manufacturers' requirements for installation of insulation in attics, as required.
2. Provide ventilation to prevent accumulation of dust, fumes, or gases, cure materials, and disperse humidity, as required.

C. Scaffolding:

1. Type: Designed and installed by each contractor or subcontractor for his own use for work during construction. Conform to special requirements of respective trades that use scaffolding and applicable rules and regulations of local building codes.
2. Erect scaffolding independent of building walls; arrange to avoid interference with other trades.
3. Remove scaffolding when no longer required.

D. Barriers:

1. Provide barriers to prevent unauthorized entry to construction areas and protect existing facilities and adjacent properties from construction damage.
2. Provide protection to plant life designated to remain; replace damaged plant life with same type and size as damaged plant life.
3. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
4. Fencing: Coordinate any requirement for site fencing with Owner’s representative.

E. Access Roads:

1. Maintain circulation of traffic, both pedestrian and vehicular, and access to all parts of site by fire-fighting apparatus during construction.
3. Extend and relocate as construction activities progress; provide detours necessary for unimpeded traffic flow.
4. Provide and maintain access to fire hydrants, free of obstructions.
5. Provide means of removing mud from vehicle wheels before entering streets, if required.

F. Progress Cleaning: See Section 017400: Cleaning and Waste Management.

G. Removal:

1. Remove temporary facilities, including connections and debris resulting from temporary installation at construction activities completion, or at time of permanent utility connections, as applicable.
2. Clean and repair damage caused by installation or use of temporary facilities.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Products are specified by reference standards, by manufacturer's name and model number, or trade name.
    1. When specified only by reference standard, Contract may select any product meeting this standard by any manufacturer.
    2. When several products or manufacturers are specified as being equally acceptable, Contractor has option of choosing among those named.
    3. When proprietary products are specified, substitutions will be allowed only by substitution provisions specified.
    4. Any coordination, redesign of the drawings of the Contract Documents will be considered additional service for the Engineer to be paid for by the Contractor.

B. If it is desired to use products different from those indicated in Contract Documents, make written application by party requesting substitution as described. Burden of proving equality of proposed substitutions rests on party making request for substitution.

1.03 PROCEDURE

A. General:
    1. Make requests for substitution on a timely basis as single submittal. Base Contract Sum on products and systems specified in Contract Documents only.
    2. Engineer will consider reports from independent testing laboratories, verified experience records from previous users, and other printed or written information valid in the circumstances.
    3. Indicate in what respects proposed materials or products differ from those specified.
    4. Any coordination, redesign of drawings of the Contract Documents will be considered Additional Services for the Engineer to be paid for by the Contractor.

B. Include on Requests for Substitution:
    1. Technical data.
    2. Manufacturer's dated product data describing installation, use, and care, as applicable, of proposed substitution.
    3. Complete cost data, indicate: material cost, installed cost, and savings, if any, resulting from proposed substitution.

4. Statement from proposed manufacturers indicating products, materials, or assemblies in substitution do not contain asbestos or polychlorinated biphenyl (PCB) in any form.

C. Determination as to acceptability of proposed substitutions will be based on data submitted only.

D. Appropriate modification will be issued on a timely basis after submittal, if proposed substitution is approved by Owner's representative, Contractor shall be responsible for furnishing materials and products in accord with Contract Documents, unless requests for substitutions are received and approved as described above.

1.04 TIME SUBSTITUTION

A. In event specified items cannot be delivered to Project and incorporated into Work at such times and in such quantities as to cause no delay, Contractor may request substitution in manner described above. Should accepted substitution provide cost savings, Contract price will be adjusted by Change Order with Owner receiving benefit of net savings. No increase in Contract price will be allowed on substitutions made after 30 day substitution period.

B. Inability to obtain specified items due to Contractor's failure to place timely orders will not be considered reason for authorizing substitutions.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 60 00

SECTION 01 65 00

PRODUCT DELIVERY REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Requirements of this section are general in nature. Refer to individual specification sections for additional, specific requirements.

B. Packing and shipping:
   1. Deliver manufactured products to Project site in manufacturer's original packaging with labels and seals intact and legible; indicate manufacturer and produce name, description, mixing and application instructions, and fire-resistive classifications, as applicable.
   2. Inspect materials upon delivery to ensure proper material, color, type and quantity.
   3. Deliver materials to be stored outside on ground on pallets where practical.

C. Acceptance at site:
   1. Unload materials; check for damage.
   2. Open, punctured, or opened damaged containers or wet materials will not be accepted.
   3. Damaged materials determined by visual inspection will not be accepted.
   4. Remove rejected materials from site immediately.

D. Storage and protection:
   1. General:
      a. Store materials and equipment in dry area, under cover, off ground at least 6"; protect from freezing and excessive heat, except for materials not subject to damage or deterioration by contact with ambient environmental conditions.
      b. Observe manufacturer's recommendations for positioning, separation and ventilation.
      c. Store in manufacturer's protective packaging or original containers with labels and installation instructions intact.
      d. Remove wet, damaged, or deteriorated materials.
   2. Prevent corrosion, soiling, breakage of materials, or contact with deleterious materials.
   3. Store and handle products subject to spillage in areas where spills will not deface finished surfaces or other work.
   4. Cover materials stored outside, not under cover with non-staining waterproof breathable tarps until used. Recover unused materials during nonworking hours.

5. Flammable or hazardous materials:
    a. Store minimum quantities in protected areas.
    b. Provide appropriate type fire extinguishers near storage areas.
    c. Observe manufacturer's precautions and applicable ordinances and regulations.
    d. Do not store flammable materials on roofs during non-Work hours.
6. Comply with each manufacturer's instructions and recommendations for product storage and handling.

E. Handling:
1. Handle materials and equipment to prevent damage, deterioration, or contamination.
2. Installation of physically damaged or stained materials prior to material installation is prohibited.

F. Inspection and installation:
1. Comply with manufacturer's product data in aspects of basic material usage, installation, and substrate preparation, except where more stringent requirements
are indicated.
2. Inspect substrates prior to installation of applied materials. Correct unacceptable conditions prior to proceeding with work.
3. Be responsible for verifying and obtaining proper substrate conditions, tolerances, and material alignments to receive applied or attached materials and construction.
4. Provide substrates sound, clean, dry, and free of imperfections or conditions detrimental to reception of applied materials.
5. Align material to give smooth, uniform surface planes within specified tolerances and straight, plumb surfaces.
6. Provide finished surfaces clean, uniform, and free of damage, soiling, or defects in material and finish.
7. Finished surfaces: Match color and texture of samples provided by or approved by Engineer.
8. Protection:
    a. Protect finished surfaces from damage and soiling during application, drying or curing.
    b. Provide temporary protective coverings or barriers until Date of Substantial Completion unless otherwise indicated.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 65 00

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 REQUIREMENTS:

A. Contractor shall be responsible for cutting, fitting and patching required to complete Work and to:
   1. Make its parts fit together properly.
   2. Uncover work to provide for installation of ill-timed work.
   3. Remove and replace defective work.
   4. Remove and replace work not conforming to Contract Documents.
   5. Remove samples of installed work as required for testing.
   6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

1.03 RELATED REQUIREMENTS

None.

1.04 SUBMITTALS

A. Submit the following in accordance with Section 013300: Submittal Procedures.

B. Submit a written request to Owner and Engineer well in advance of executing cutting or alteration which affects:
   1. Work of Owner or separate contractor.
   2. Structural value of integrity of any element of Project.
   3. Integrity of weather exposed or moisture resistant elements.
   4. Efficiency, operational life, maintenance or safety of operational elements.
   5. Visual qualities of sight and exposed elements.

C. Request shall include:
   1. Identification of Project and description of affected work.
   2. Necessity for cutting or alteration.
   3. Effect on work of Owner or separate contractor, or on structural or weatherproof integrity of Project.
   4. Alternatives to cutting and patching.
   5. Cost proposal, when applicable.
   6. Written permission of separate contractor whose work will be affected.
   7. Description of proposed work including:
      a. Scope of cutting, patching, alteration, or excavation.
      b. Products proposed to be used.
      c. Extent of refinishing to be included.

D. Should conditions of Work or schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 016000 – Product Requirements.

E. Submit written notice to Engineer designating date and time work will be uncovered.

PART 2 PRODUCTS

2.01 MATERIALS:

A. Comply with specifications and standards for each specific product involved.

B. Where specifications and standards have not been provided, provide materials and fabrication consistent with quality of Project and intended for commercial construction.

C. Provide new materials for cutting and patching unless otherwise indicated.

PART 3 EXECUTION

3.01 INSPECTION

A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, inspect conditions affecting installation of products, or performance of work.

C. Report unsatisfactory or questionable conditions to Owner in writing; do not proceed with work until Owner has provided further instructions.

3.02 PREPARATION

A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.

B. Protect other portions of Project from damage.

3.03 PERFORMANCE

A. Execute cutting to avoid damage to other work and by methods which will provide proper surfaces to receive installation of repairs.
    1. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

B. Employ same installer or fabricator to perform cutting and patching work as employed for new construction for:
    1. Weather and exposed or moisture resistant elements.
    2. Sight and exposed finished surfaces.

C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
E. Fit work tight to pipes, sleeves, ducts, conduit and penetrations through surfaces.
F. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
    1. For continuous surfaces, refinish to nearest intersection.
    2. For an assembly, refinish entire unit.
G. At penetrations of fire rated wall, ceiling or floor construction completely seal voids with fire rated material, full thickness of construction element.
H. Inspect existing conditions and completely fill gaps, openings and any abandoned elements to provide a secure facility including potential insect and rodent infestations.

END OF SECTION 01 73 29

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Safety Requirements:
1. Store volatile and toxic waste in covered metal containers. Remove from Project site daily. Dispose of properly.
2. Provide adequate ventilation during use of volatile or toxic substances.
3. Prohibited practices:
    a. Allowing volatile or toxic wastes to accumulate on Project site.
    b. Burning or burying of waste materials or rubbish on Project site.
    c. Disposal of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains, on pavements, in gutters or downspouts, or on Project site in any manner.
    d. Disposal of waste or cleaning materials on Project site.
4. Clean up accidentally spilled materials as quickly as possible.
5. If asbestos-containing materials are identified, removal and disposal shall be in accordance with South Carolina DHEC and EPA regulations.

B. Clean-up During Construction:
1. Execute cleaning procedures to ensure building, project site, and adjacent properties are maintained free from debris and rubbish.
2. Wet down materials subject to blowing. Throwing waste materials from heights is prohibited.
3. Provide covered, on-site containers for waste collection. Place waste materials and rubbish in containers in an expeditious manner to prevent accumulation. Remove waste from Project site when containers become full.
4. Legally dispose of waste materials, rubbish, volatile materials, and cleaning materials off Project site.
5. Clean and maintain interior spaces during and following installation of insulation in attics where indicated. Protect finishes and clean surfaces from contamination during cleaning operations.
6. Accumulation of debris contributing to survival or spread of rodents, roaches, or other pests are prohibited.
    a. Remove debris containing food scraps on daily basis.
    b. Contractor shall be responsible for securing services of pest exterminator at no additional cost.
7. Disposal of materials in waterways is prohibited.

8. Graffiti or other similar distasteful comments or illustrations authored on any building materials used on Project are prohibited. Monitor Project for violations of this criteria, and, if found, take appropriate action immediately to cover or replace defaced materials as necessary.

C. Final Cleaning:

1. Clean roof surfaces in accord with manufacturer's product data and requirements specified in sections just prior to Date of Substantial Completion. Perform general and specific cleaning prior to request for Project or portion thereof to be inspected or Substantial Completion.
2. Remove dust, debris, oils, stains, fingerprints, and labels from exposed interior and exterior finish surfaces, including glazing materials.
3. Replace, patch, and touch up marred surfaces to match adjacent finishes. Replace materials which cannot be repaired or patched.
4. Clean disturbed areas of Project site of debris:
    a. Broom clean paved surfaces. Remove oil and similar deleterious substances in manner not to damage substrates.
    b. Remove debris from grassed and landscaped areas and disturbed areas.
5. Thoroughly clean plumbing fixtures used by Contractors or Subcontractors.

PART 2 PRODUCTS _ NOT USED

PART 3 EXECUTION _ NOT USED

END OF SECTION 01 74 00

SECTION 01 77 00

CLOSEOUT REQUIREMENTS

PART 1 _ GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Project Record Documents.
   3. Operation and maintenance manuals.
   4. Warranties.
   5. Instruction of Owner's personnel.
   6. Final cleaning.

B. Related Sections include the following:
   1. Section 017400 Cleaning and Waste Management.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases, if any.
   4. Complete testing of systems.
   5. Terminate and remove temporary facilities (unless otherwise approved) from Project site, along with mockups, construction tools, and similar elements.
   6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   7. Complete final cleaning requirements, including touchup painting.
   8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Owner’s Representative that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.04 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment.
   2. Submit certified copy of Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Contractor. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit asbestos waste disposal landfill receipts, if asbestos roofing was removed and disposed of.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   5. Complete training and instruct Owner's designated personnel in operation, adjustment, and maintenance of products and systems.
   6. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, property surveys, and similar final record information.
   7. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   8. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.05 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.06 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's and Owner's reference during normal working hours.

B. Record documents are to be provided to Owner prior to final completion including but are not limited to the following:

1. As-built drawings and specifications indicating all changes to the contract documents (including sprinkler and fire alarm).
2. Operating and maintenance manuals.
3. Manufacturer's installation instructions.
4. Warranties.
5. Copies of all approved submittals and samples.
6. List of all trades, vendors and suppliers with contact information.

C. Record Drawings: Maintain and submit two sets of blue or black line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual "As-Built" information where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    b. Accurately record information in an understandable drawing technique.
    c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
    d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross reference on Contract Drawings.
2. Mark record sets with contracting color pen or pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Mark important additional information that was either shown schematically or omitted from original Drawings.
4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

D. Maintain three complete copies of the Project Manual, including addenda. Bound into each Project Manual, one copy of other written construction documents such as change orders, addenda, supplemental drawings, RFI's, and other modifications issued in printed form during construction. Mark these documents to indicate variations in actual work

performed in comparison with the text of the specifications and modifications. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation. Note related record drawing information and product data.

E. Maintain one copy of each product data submittal. Note related change orders and markup of record drawings and specification. Mark these documents to show variations in actual work performed in comparison with the information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.

F. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Maintain one copy of each sample submittal. Include multiple samples showing full color range when inherent to product.

1.07 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as described herein.

B. Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data by the CSI Division Format in individual, heavy duty, 3-inch, 3-ring, vinyl covered binders, with pocket folders for folded sheet information. Identify contents and building name on front and spine of each binder.

C. Include the following types of information:

1. Emergency instruction.
2. Spare parts list.
3. Copies of warranties.
4. Inspection procedures.
5. Shop drawings and product data.
6. Record of finishes used.
7. Manufacturer's installation instructions.
8. Names of installers and local service representatives.

D. Three sets of manuals will be provided to Owner. These manuals must be reviewed and approved by the design team prior to final acceptance.

1.08 WARRANTIES

A. Organize warranties with proper indexing and labeling and bind into a single heavy duty, three ring, vinyl covered binder. Identify contents and building name on front and spine of binder.

B. Include permit, inspection reports, and certificates from applicable government agencies that construction has been inspected as required by laws or ordinances and that the buildings and/or components are approved for occupancy or use.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.09 ELECTRONIC CLOSE OUT DOCUMENTS

A. Compile all close out documents, record drawings, submittals, and manuals. Record on electronic format, CD/DVD, for Owner's record. Number of copies to be determined; provide not less than six (6) CD/DVD's. Disc shall be distributed following approval of hard copies.

PART 2 _ PRODUCTS _ NOT USED

PART 3 _ EXECUTION

3.01 DEMONSTRATION AND TRAINING

A. Arrange for each manufacturer, or their approved agent, of systems or equipment that requires regular maintenance to meet with Owner's personnel to provide instruction in proper operation and maintenance. A minimum of ten days' notice must be provided for the meeting.

B. Program Structure: Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Identification systems.
5. Hazards.
6. Cleaning.
7. Warranties and bonds.
8. Maintenance agreements and similar continuing commitments.

C. As part of the instruction for operating equipment, demonstrate the following procedures:

1. Safety procedures.
2. Troubleshooting.

3.02 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Refer to Section 017400 Cleaning and Waste Management.

END OF SECTION 01 77 00

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Requirements:
   1. Compile specified warranties and bonds.
   2. Compile specified service and maintenance contracts.
   3. Co-execute submittals when specified.
   4. Review submittals to verify compliance with Contract Documents.
   5. Submit to Architect for review and transmittal to Owner.

B. Related sections:
   1. Section 017700: Closeout Procedures.
   2. Each respective specification section.
   3. Respective section of specifications specifying product: Provisions of Warranties and Bonds, Duration.

1.03 SUBMITTALS:

A. Requirements:
   1. Assemble warranties, bonds, and service and maintenance contracts, and subcontractors.
   2. Number or original signed copies required: Two each.
   3. Table of contents: Type neatly in orderly sequence. Provide complete information for each item.
      a. Product or work item.
      b. Firm name, principal name, address, and telephone number.
      c. Scope.
      d. Beginning date for warranty, bond, or service maintenance contract.
      e. Duration of warranty, bond, or service maintenance contract.
      f. Provide information for Owner's personnel:
         1) Proper procedure in case of failure.
         2) Instances which might affect the validity of warranty or bond.
      g. Contractor, name of responsible principal, address, and telephone number.

B. Form:

1. Prepare in duplicate packets.
2. Format:
    a. Size: 8 ½" by 11": punch sheets for standard three ring binder. Fold larger sheets to fit into binders.
    b. Binders: Commercial quality, three ring, with durable and cleanable plastic covers.
    c. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
        1) Type of Project.
        2) Name of Contractor.

C. Time:

1. Submit documents within ten days after inspection and acceptance from equipment or component parts supplier, installer, or manufacturer put into service during construction progress.
2. Make submittals within ten days after Date of Substantial Completion, prior to final request for payment.
3. Items of work, where acceptance is delayed materially beyond Date of Substantial Completion: Provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

D. Submit warranties, bond, service, and maintenance contracts specified in respective specifications sections.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 78 00

SECTION 04 05 31

MASONRY REPOINTING

PART I GENERAL

1.01 DESCRIPTION

Requirements for repointing of existing masonry. For the purposes of this specification, the term “repointing” is used in accordance with the usage of the Masonry Advisory Council: “to place plastic mortar into cut or raked joints to correct defective mortar joints in masonry.”

1.02 RELATED WORK

None.

1.03 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.

B. American Society for Testing and Materials (ASTM):

C67-07 Brick and Structural Clay Tile, Sampling and Testing

C216-07 Facing Brick (Solid Masonry Units Made From Clay or Shale)

C270-07 Mortar for Unit Masonry

C. International Masonry Institute: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

PART II PRODUCTS

2.01 REPOINTING MORTAR

As per appendix X3 of ASTM C270.

2.02 REPLACEMENT MASONRY UNITS

A. Face Brick:

1. ASTM C216, Grade SW, Type FBS. Brick shall be classified slightly efflorescent or better when tested in accordance with ASTM C67.

2. Face brick shall match facing brick of the existing buildings that are being repointed.

B. Other Units to match existing.

PART III EXECUTION

3.01 CUT OUT OF EXISTING MORTAR JOINTS

A. Cut out existing mortar joints (both bed and head joints) and remove by means of a toothing chisel or a special pointer's grinder, to a uniform depth of to 3/4-inch, or until sound mortar is reached. Take care to not damage edges of existing masonry units to remain.

B. Remove dust and debris from the joints by brushing, blowing with air or rinsing with water. Do not rinse when temperature is below freezing.

3.2 JOB CONDITIONS

A Protection: Protect newly pointed joints from rain, until pointed joints are sufficiently hard enough to prevent damage.

B. Cold Weather Protection:

1. Repointing may be performed in freezing weather when methods of protection are utilized.

2. Comply with applicable sections of "Recommended Practices for Cold Weather Construction" as published by International Masonry Industry All Weather Council.

3. Existing surfaces at temperatures to prevent mortar from freezing or causing other damage to mortar.

3.03 INSTALLATION OF REPOINTING MORTAR

A. Immediately prior to application of mortar, dampen joints to be repointed. Prior to application of pointing mortar, allow masonry units to absorb surface water.

B. Tightly pack mortar into joints in thin layers, approximately 1/4-inch thick maximum.

C. Allow layer to become "thumbprint hard" before applying next layer.

D. Pack final layer flush with surfaces of masonry units. When mortar becomes "thumbprint hard", tool joints.

3.04 TOOLING OF JOINTS

A. Tool joints in patch work with a jointing tool to match the existing surrounding joints.

3.05 REPLACEMENT OF MASONRY UNITS

A. Cut out mortar joints surrounding masonry units that are determined to need to be removed and replaced in consultation with Owner's representative.

1 Units removed may be broken and removed, providing surrounding units to remain are not damaged.

2. Once the units are removed, carefully chisel out the old mortar and remove dust and debris.

3. If units are located in exterior wythe of a cavity or veneer wall, exercise care to prevent debris falling into cavity. //

B. Dampen surfaces of the surrounding units before new units are placed.

1. Allow existing masonry to absorb surface moisture prior to starting installation of the new replacement units.

2. Butter contact surfaces of existing masonry and new replacement masonry units with mortar.

3. Center replacement masonry units in opening and press into position.

4. Remove excess mortar with a trowel.

5. Point around replacement masonry units to ensure full head and bed joints.

6. When mortar becomes "thumbprint hard", tool joints.

3.06 CLEANING

A. Clean exposed masonry surfaces on completion.

B. Remove mortar droppings and other foreign substances from wall surfaces.

C. First wet surfaces with clean water, then wash down with a solution of soapless detergent specially prepared for cleaning brick.

D. Brush with stiff fiber brushes while washing, and immediately thereafter hose down with clean water.

E. Free clean surfaces from traces of detergent, foreign streaks or stains. Protect materials during cleaning operations including adjoining construction.

F Use of muriatic acid for cleaning is prohibited.

End of Section 04 05 31

SECTION 06 10 00

ROUGH CARPENTRY

PART I GENERAL

1.01 DESCRIPTION:

Wood blocking, framing, sheathing, furring, nailers, roof deck, rough hardware, and light wood construction.

1.02 RELATED WORK:

A. Roof Deck Preparation: Section 07 31 00, SHINGLE ROOF SYSTEMS.

B. Roof Deck Preparation: Section 07 55 00, SBS MODIFIED BITUMEN MEMBRANE ROOFING.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Protect lumber and other products from dampness both during and after delivery at site.

B. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.

C Stack plywood and other board products so as to prevent warping.

D. Locate stacks on well drained areas, supported at least 150 mm (6 inches) above grade and cover with well ventilated, covers to protect lumber from driving rain.

1.04 APPLICABLE PUBLICATIONS:

A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.

B. American Forest and Paper Association (AFPA): National Design Specification for Wood Construction NDS-05 Conventional Wood Frame Construction.

C. American Plywood Association (APA): E30-07 Engineered Wood Construction Guide.

D. American Society for Testing And Materials (ASTM): A47-99(R2009) Ferritic Malleable Iron Castings A48-03(R2008) Gray Iron Castings.

A653/A653M-10 Steel Sheet Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process.

C954-10 Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases to Steel Studs from 0.033 inch to 0.112-inch in thickness

C10 02-07 Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Metal Studs

D143-09 Small Clear Specimens of Timber, Method of Testing

D1760-01 Pressure Treatment of Timber Products

F844-07 Washers, Steel, Plan (Flat) Unhardened for General Use

F1667-08 Nails, Spikes, and Staples

E. Federal Specifications (Fed. Spec.): MM-L-736C Lumber; Hardwood.

F. Commercial Item Description (CID):

AA-55615 Shield, Expansion (Wood Screw and Lag Bolt Self Threading Anchors).

G. Military Specification (Mil. Spec.): MIL-L-19140E Lumber and Plywood, Fire-Retardant Treated.

J. U.S. Department of Commerce Product Standard (PS) PS 1-95 Construction and Industrial Plywood PS 20-05 American Softwood Lumber Standard.

PART II PRODUCTS

A. LUMBER:

1. Unless otherwise specified, each piece of lumber bear grade mark, stamp, or other identifying marks indicating grades of material, and rules or standards under which produced.

2. Identifying marks in accordance with rule or standard under which material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.

3. Inspection agency for lumber approved by the Board of Review, American Lumber Standards Committee, to grade species used.

B. Structural Members: Species and grade as listed in the AFPA, National Design Specification for Wood Construction having design stresses as shown.

Lumber Other Than Structural:

Unless otherwise specified, species graded under the grading rules of an inspection agency approved by Board of Review, American Lumber Standards Committee.

Framing lumber: Minimum extreme fiber stress in bending of 1100.

Furring, blocking, nailers and similar items 4 inches and narrower Standard Grade; and, members 6 inches and wider, Number 2 Grade.

Sizes:

Conforming to Prod. Std., PS20.

Size references are nominal sizes, unless otherwise specified, actual sizes within manufacturing tolerances allowed by standard under which produced.

Moisture Content:

At time of delivery and maintained at the site.

Boards and lumber 2 inches and less in thickness: 19 percent or less.

Lumber over 2 inches thick: 25 percent or less.

F. Fire Retardant Treatment:

Mil Spec. MIL-L-19140 with piece of treated material bearing identification of testing agency and showing performance rating.

Treatment and performance inspection, by an independent and qualified testing agency that establishes performance ratings.

G. Preservative Treatment:

Treat wood members and plywood exposed to weather or in contact with plaster, masonry or concrete, including framing of open roofed structures; furring, and sleepers that are less than 24 inches from ground; nailers, edge strips, blocking, crickets, curbs, cant, vent strips and other members used in connection with roofing and flashing materials.

Treat other members specified as preservative treated (PT).

Preservative treat by the pressure method complying with ASTM D1760, except any process involving the use of Chromated Copper arsenate (CCA) for pressure treating wood is not permitted.

2.02 PLYWOOD

A. Comply with Prod. Std., PS 1.

B. Bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.

2.3 ROUGH HARDWARE AND ADHESIVES:

A. Miscellaneous Bolts: Expansion Bolts: C1D, A-A-55615; lag bolt, long enough to extend at least 2-1/2 inches into masonry or concrete. Use 1/2 inch bolt unless shown otherwise.

B. Washers:

ASTM F844.

Use zinc or cadmium coated steel or cast iron for washers exposed to weather.

C. Screws:

Wood to Wood: ANSI B18.6.1 or ASTM C1002.

Wood to Steel: ASTM C954, or ASTM C1002.

D. Nails:

1. Size and type best suited for purpose unless noted otherwise. Use stainless steel or zinc-coated nails, for nailing wood work exposed to weather and on roof blocking.

2. ASTM F1667:

a. Common: Type I, Style 10.

b. Concrete: Type I, Style 11.

c. Barbed: Type I, Style 26.

d. Underlayment: Type I, Style 25.

e. Masonry: Type I, Style 27.

f. Use special nails designed for use with ties, strap anchors, framing connectors, joists hangers, and similar items. Nails not less than 1-1/4 inches long, 8d and deformed or annular ring shank.

PART III EXECUTION

3.1 INSTALLATION OF FRAMING AND MISCELLANEOUS WOOD MEMBERS:

A. Conform to applicable requirements of the following:

AFPA WCD-number 1, Manual for House Framing for nailing and framing unless specified otherwise.

APA for installation of plywood.

B. Fasteners:

1. Nails.

   a. Nail in accordance with the Recommended Nailing Schedule as specified in AFPA Manual for House Framing where detailed nailing requirements are not specified in nailing schedule.

   b. Select nail size and nail spacing sufficient to develop adequate strength for the connection without splitting the members.

   c. Use special nails with framing connectors.

   d. Use eight penny or larger nails for nailing through 1 inch thick lumber and for toe nailing 2 inch thick lumber.

   e. Use 16 penny or larger nails for nailing through 2 inch thick lumber.

   f. Select the size and number of nails in accordance with the Nailing Schedule except for special nails with framing anchors.

2. Bolts:

   a. Fit bolt heads and nuts bearing on wood with washers.

   b. Countersink bolt heads flush with the surface of nailers.

   c. Embed in concrete and solid masonry or use expansion bolts.

   d. Special bolts or screws designed for anchor to solid masonry or concrete in drilled holes may be used.

   e. Use toggle bolts to hollow masonry or sheet metal.

   f. Use bolts to steel over 0.112 inch, 11 gage in thickness.

   g. Secure wood nailers to vertical structural steel members with bolts, placed one at ends of nailer and 24 inch intervals between end bolts. Use clips to beam flanges.

3. Drill Screws to steel less than 2.84 mm (0.112 inch) thick.

   a. ASTM C1002 for steel less than 0.033 inch thick.

   b. ASTM C 954 for steel over 0.033 inch thick.

4. Power actuated drive pins may be used where practical to anchor to solid masonry, concrete, or steel.

5. Do not anchor to wood plugs or nailing blocks in masonry or concrete. Use metal plugs, inserts or similar fastening.

C. Screws to Join Wood:

1. Where shown or option to nails.
2. ASTM C1002, sized to provide not less than 25 mm (1 inch) penetration into anchorage member.
3. Spaced same as nails.

D. Blocking Nailers, and Furring:

1. Install furring, blocking, and nailers where shown.
2. Use longest lengths practicable.
3. Use fire retardant treated wood blocking where shown at openings and where shown or specified.
4. Layers of Blocking or Plates:
   a. Stagger end joints between upper and lower pieces.
   b. Nail at ends and not over 24 inches between ends.
   c. Stagger nails from side to side of wood member over 5 inches in width.

End of Section 06 00 00

SECTION 07 31 00

REPLACE SHINGLE ROOF SYSTEMS

PART I GENERAL

1.01 SECTION INCLUDES

A. Asphalt roofing shingles.

B. Leak barrier and roof deck protection.

C. Metal flashing associated with shingle roofing.

D. Starter strip roofing shingles

1.02 RELATED SECTIONS

A. Section 06100 - Rough Carpentry: Framing, wood decking, and roof sheathing.

B. Section 07620 - Flashing and Sheet Metal: Sheet metal flashing not associated with shingle roofing; gutters and downspouts.

1.03 REFERENCES American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards

1. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
3. ASTM D 3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
4. ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
5. ASTM D 3462 – Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules.
6. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
7. ASTM D 7158 - Standard Test Method for Wind-Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance MethodUnderwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306)

1. UL 790 - Tests for Fire Resistance of Roof Covering Materials.
2. UL 997 - Wind Resistance of Prepared Roof Covering Materials.
3. UL 2218 – Impact Resistance of Prepared Roof Covering Materials.

C. Asphalt Roofing Manufacturers Association (ARMA)

D. Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual.

E. National Roofing Contractors Association (NRCA)

F. American Society of Civil Engineers (ASCE).

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

G. U.S. Green Building Council (USGBC)

H. Leadership in Energy and Environmental Design (LEED)

I. ENERGY STAR

J. Cool Roof Rating Council (CRRC)

K. Miami Dade County

1.04 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.05 SUBMITTALS

A. Submit copies of manufacturer's product data sheets, detail drawings and samples for each type of roofing product.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Provide all primary roofing products, including shingles, underlayment, leak barrier, and ventilation, by a single manufacturer.

B. Installer Qualifications: Installer must be approved for installation of all roofing products to be installed under this section.

1.07 REGULATORY REQUIREMENTS

A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.

B. Install all roofing products in accordance with all federal, state and local building codes

C. All work shall be performed in a manner consistent with current OSHA guidelines and standards.

1.08 PREINSTALLATION MEETING

A. General: A pre-installation meeting shall be held prior to the start of roofing work on the Beaufort Campus.

B. Timing: The meeting shall take place before or at the start of the roofing installation.

C. Attendees: Meeting to be called for by manufacturer's certified contractor. Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative. Non-mandatory attendees shall include the owner's representative, engineer's representative, and the general contractor's representative.

D. Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.

B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F; do not store near steam pipes, radiators, or in direct sunlight.

C. Store bundles on a flat surface. Maximum stacking height shall not exceed Manufacturer's recommendations. Store all rolls on end.

D. Store and dispose of solvent-based materials in accordance with all federal, South Carolina and local regulations.

1.10 WEATHER CONDITIONS

A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with the manufacturer's recommendations.

1.11 WARRANTY

A. Provide to the owner a manufacturer's warranty covering:

1. Roofs installed by a Manufacturer-Certified Contractor only.
2. Manufacturing defects: 100% coverage for materials and labor for:

   30 years
3. Workmanship errors: 100% coverage for workmanship errors for:

   30 years.
4. Roof system shall NOT be installed over an existing roof. All existing roof materials must be removed to the deck.
5. Warranted against algae discoloration for 10 years
6. The Contractor/Installer must register and pay for this warranty. The Contractor/Installer shall schedule a start-up and at least one interim inspection as required by the manufacturer at least three weeks prior to the start of roof work.

PART II PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers:

1. GAF, 1361 Alps Rd., Wayne, NJ 07470. Tel: 1-973-628-3000.
2. Certainteed Corporation, P.O. Box 860, Valley Forge, PA 19482. Tel: 800.233.8990
3. Atlas, 2000 RiverEdge Parkway, Suite 800 Atlanta, GA 30328. Tel: 1-800-388-6134

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.02 SHINGLES

A Heavyweight, impact resistant, high-wind resistant (130 mph minimum), granule-surfaced, with a laminated, fiberglass reinforced construction, algae-resistant, architectural laminated shingle.

1. UL 790 Class A rated with UL 997 Wind Resistance Label;
2. ASTM D 7158, Class H;
3. ASTM D 3161, Class F;
4. ASTM D 3018, Type 1;
5. Passes UL 2218, Class 4 Impact Test;
6. ASTM D 3462;
7. AC438;
8. CSA A123.5-98;
9. Miami-Dade County Approved,
10. Florida Building Code Approved,
11. ICC Report Approval.
12. Color: Match existing as close as possible with Owner approval.

2.03 HIP AND RIDGE SHINGLES

A. High profile, self sealing, fiberglass/asphalt construction, hip and ridge cap shingles matching the color of selected roof shingle. Miami-Dade County approved, Florida Building Code approved, ICC, and CSA 123.5-98.

2.04 STARTER STRIP

A. Self-sealing starter shingle designed for the selected roof shingles.

2.05 LEAK BARRIER

A. Self-adhering, self sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Approved by UL, Miami-Dade, ICC, and meets ASTM D-1970, such as alco Shield or equivalent.

2.06 SHINGLE UNDERLAYMENT

A. Self-adhering, SBS modified bitumen underlayment. Complies with ASTM D1970. Approved by Miami-Dade County, Florida Building Code, and ICC.

2.07 ROOFING CEMENT

A. Asphalt Plastic Roofing Cement (asbestos-free) meeting the requirements of ASTM D 4586, Type I or II.

2.08 ROOF ACCESSORIES

A. Exterior acrylic rust resistant aerosol roof accessory paint to compliment the roof.

2.09 ATTIC VENTILATION

A Attic Vents

1. High-wind-tested (100 mph minimum), Miami-Dade approved, no moving parts. For use in conjunction with existing eave/soffit ventilation products.

2. Ridge vents for Marine Science building.

2.10 NAILS

A Standard round wire, stainless steel; 10 to 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood or oriented strand board by at least 1/8 inch (3.18mm).

2.11 METAL FLASHING

A. 24 gauge stainless steel sheet, complying with ASTM A 924/A 924M, Type 304 or Type 316. Step flashing vertical leg shall be at least two inches longer than standard.

2.12 VENT STACK BOOTS

A. Neoprene vent stack flashing boots for existing stacks.

PART III EXECUTION

3.01 EXAMINATION

A. Do not begin installation until the roof deck has been properly prepared.

3.02 PREPARATION

A. Remove all existing roofing down to the roof deck.

B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.

C. Replace damaged deck with new materials.

D. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

E. If the roof deck is plywood or OSB sheathing, seal joints in sheating with roof tape.

F. If the roof deck is OSB, check with manufacturer of self-adhering underlayment to determine if the OSB deck requires priming.

3.03 INSTALLATION OF UNDERLAYMENTS A. General:

1. Install using methods recommended by manufacturer, in accordance with local building codes, or FEMA 7.2 Roof Underlayment for Asphalt Shingle Roofs. When local codes, application instructions, or FEMA 7.2 are in conflict, the more stringent requirements shall take precedence.

2. Seal the self-adhering sheet to deck penetrations with asphalt roof cement.

B. Eaves:

1. Install eaves edge metal flashing (drip edge) tight with fascia boards; lap joints 2 inches (51mm) and seal with plastic cement or high quality urethane sealant; nail at the top of the flange.

C. Valleys:

1. Install leak barrier membrane at least 36 inches wide and centered on the valley. Lap ends 6 inches and seal.

2. Where valleys are indicated to be "open valleys", install metal flashing over leak barrier before roof deck protection is installed; DO NOT nail through the flashing. Secure the flashing by nailing at 18 inches on center just beyond edge of flashing so that nail heads hold down the edge.

D. Hips and Ridges:

1. Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.

E. Roof Deck:

1. Install one layer of self-adhering modified bitumen underlayment over the entire area not protected by leak barrier at the eaves or valley. Install sheets horizontally so water sheds and nail in place.
2. On roofs sloped at more than 4:12, lap horizontal edges at least 2 inches (51mm) and at least 2 inches over eaves protection membrane.
3. On roofs sloped between 2 :12 and 4:12, lap horizontal edges at least 19 inches and at least 19 inches over eaves protection membrane.
4. Lap ends at least 4 inches. Stagger end laps of each layer at least 36 inches.
5. Lap underlayment over leak barrier in valley at least 6 inches.

F. Penetrations:

1. Vent pipes: Install a 24 inch square piece of leak barrier membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install leak barrier membrane extending at least 6 inches (152mm) up the wall and 12 inches on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Skylights and roof hatches: Install leak barrier membrane from under the built-in counterflashing and 12 inches on to the roof surface lapping over roof deck underlayment.
4. Chimneys: Install leak barrier membrane around entire chimney extending at least 6 inches up the wall and 12 inches on to the roof surface. Lap the membrane over the roof deck underlayment.
5. Rake Edges: Install metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches and seal with plastic cement; secure with nails.

3.04 INSTALLATION OF STARTER SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Refer to application instructions for the selected starter strip shingles.

B. Placement and Nailing:

1. For maximum wind resistance along rakes & eaves, install starter strip containing sealant or seal shingles to underlayment and each other with a 4" (102mm) width of asphalt plastic roof cement.
2. Place starter strip shingles 1/4" – 3/4" over eave and rake edges to provide drip edge.
3. Nail approximately 1-1/2" – 3" above the butt edge of the shingle or manufacturer’s recommended nailing pattern. Six nails per starter strip.
4. Use 1-inch dabs of asphalt roof cement between starter strips and first course.
5. Rake starter course should overlap eave edge starter strip at least 3".
6. Install rake starter strip with ¼” overlap on edge metal.

3.05 INSTALLATION OF SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
3. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.
4. Do not install shingles in vertical sections or “columns” or by “raking.”

B. Placement and Nailing:

1. Secure with 6 nails per shingle per manufacturer’s application instructions for enhanced nailing pattern or local codes.
2. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
3. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails. Drive nails perpendicular to deck.
4. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Valleys

1. Install valleys using the "closed cut valley" method:

a. Run the first course of shingles from the higher roof slope across the valley at least 12 inches (305mm).

b. Run succeeding courses of shingles from the lower roof slope across the valley at least 12 inches (305mm) and nail not closer than 6 inches (152mm) to center of valley.

c. Run shingles from the upper roof slope into the valley and trim 2 inches (51mm) from the center line.

2. Install valleys using "woven valley" method.

a. Run shingles from both roof slopes at least 12 inches (305mm) across center of valley, lapping alternate sides in a woven pattern.

b. DO NOT nail less than 6 inches (152mm) from the valley center line.

D. Penetrations

1. All Penetrations are to be flashed according to manufacturer, ARMA and NRCA application instructions and construction details. Coordinate shingle installation with vent stack boot installation.

3.06 INSTALLATION OF ATTIC VENTILATION

A. General

1. Ventilation must meet or exceed current F.H.A., H.U.D. and South Carolina Building Code requirements.

B. Roof Near-Ridge Vents:

1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.

2. Install a 24 inches (610mm) square of leak barrier, centered around the hole for roof louvers.

3. Install according to manufacturers instructions for flashing vent penetrations.

C. Ridge Vents:

1. Install ridge vents in coordination with shingle and ridge shingle installation according to manufacturer’s instructions.

3.07 PROTECTION

A. Protect installed products from foot traffic until completion of the project.

B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

End of Section 07 31 00

SECTION 07 55 00
SBS MODIFIED BITUMEN MEMBRANE ROOFING

PART I GENERAL

1.01 SECTION INCLUDES

A. Cold Applied SBS Roofing Membrane System.

1.02 RELATED SECTIONS

A. Section 06100 - Rough Carpentry.

B. Section 07600 - Sheet Metal.

1.03 REFERENCES

A. American Society of Civil Engineers - Reference Document ASCE 7-05, Minimum Design Loads for Buildings and Other Structures.

B. American Society of Testing and Materials (ASTM):
1. ASTM C 165 - Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
2. ASTM C 203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.
3. ASTM C 355 - Test Methods for Test for Water Vapor Transmission of Thick Materials.
4. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
5. ASTM D 41 - Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
6. ASTM D 226 - Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
7. ASTM D 312 - Specification for Asphalt Used in Roofing.
8. ASTM D 1621 - Standard Test Method for Compressive Properties Of Rigid Cellular Plastics.
9. ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
10. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.
11. ASTM D 2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
12. ASTM D 2178 - Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
13. ASTM D 2626 - Specification for Asphalt Saturated and Coated Organic Base Sheet Used in Roofing.
14. ASTM D 3447 - Standard Test Method for Purity of Halogenated Organic Solvents.
15. ASTM D 4586 - Specification for Asphalt Roof Cement, Asbestos Free.

16. ASTM D 4601 - Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
17. ASTM D 5147 - Test Method for Sampling and Testing Modified Bituminous Sheet Material.
18. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
19. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
20. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.

C. CGSB 37GP56M Classification: Type 2, Class C, Grade 2.

D. DIN 50018 - Testing in a saturated atmosphere in the presence of sulfur dioxide.

E. Factory Mutual Research Corporation (FMRC):
1. FMRC - Loss Prevention Data Sheets 1-7; 1-28; 1-28R; 1-29; 1-29R; 1-49.
2. FMRC - Approval Guide - Roof Coverings and/or RoofNav assembly database.
3. FMRC Standard 4450 - Approval Standard for Class I Insulated Steel Deck Roofs.
4. FMRC Standard 4470 - Approval Standard for Class I Roof Covers.
5. FMRC Standard 4473 - Specification test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls.

F. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual-4th Edition.

G. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

H. The South Florida Building Code:
1. Dade County Test Protocol PA 105 - Withdrawal Resistance Test Procedure.
2. Dade County Test Protocol PA 114 - Standard 4450/4470, As Modified for the South Florida Building Code:
    a. Appendix A' - Above Deck Combustibility - ASTM E 108 for Class I Roof Covers.
    b. Appendix C' - Uplift Pressure Test Standard for Class I Roof Cover.
    c. Appendix D' - Uplift Pressure Test Standard for Adhered Class I Roof Covers.
    d. Appendix E' - Corrosion Test Procedure for Fasteners, Batten Bars and Stress Distribution Plates.
    e. Appendix F' - Susceptibility to Hail Damage Test Standard for Approved Roof System Assemblies.
3. Dade County PA 117, Appendix A' - Withdrawal Resistance Performance of Mechanical Fasteners Used in Roof System Assemblies.
4. Dade County PA 117, Appendix B' - Dynamic Pull-Through

Performance of Roofing Membranes Over Fastener Heads or Fasteners with Metal Bearing Plates.

I. Underwriters Laboratories (UL) - Roofing Materials and Systems Annual Directory.

J. IBC/IRC - AC75 Evaluation Reports.

1.04 CODE AND TEST REQUIREMENTS

A. 2006 International Building Code with South Carolina Adopted Changes.

B. The roof system shall have been tested in compliance with the following codes and test requirements:
   1. Underwriters Laboratories UL 790 Class A and ASTM E 108 Class A external fire resistance criteria.
   2. Factory Mutual Research Corporation windstorm classification 1-540 minimum.
   3. Metal flashings shall be in compliance with ANSI-SPRI ES-1 Wind Design Standard for Edge Systems (most recent version prevailing).
   4. Florida Building Code Section 423.25.4 for large missile impact.
   5. The roof system assembly shall be installed in compliance with all local building and safety requirements adopted by the local building code jurisdiction.

1.05 DEFINITIONS

A. Roofing Terminology: Refer to the following publications for terms related to roofing work not otherwise defined in this section.
   1. ASTM D 1079: Definitions of Terms Relating to Roofing, Waterproofing, and Bituminous Materials.
   2. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual
   3. Roof Consultants Institute Glossary of Terms

1.06 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Certification of Installer's experience with specified roof system shall be included in the submittal and proof of licensure or approval by the Manufacturer to perform work under warranty requirements of this Section.

C. A letter of intent-to-warrant from the membrane manufacturer shall be submitted before Work begins. This letter shall be on corporate letterhead, dated, signed by an executive officer of the company and notarized, clearly identifying the specific products proposed and method of application, certifying the assembly's compliance with the project specification and warranty provisions.

D. Primary evidence of compliance shall be provided with the manufacturer's letter of intent-to-warrant. A photostatic copy of the specific assembly Approval (Miami-Dade NOA or RoofNav Assembly) is required for evidence of

compliance with the specified wind load resistance; Underwriters Laboratories (UL) 790 classification (UL File designation TGFU); and Approval for large missile impact resistance as required by Subsection 5.4(d) (2) of the State of Florida Public Shelter Design Criteria for Enhanced Hurricane Protection Areas (EHPAs) (also as published in 2004 and 2007 FBC Section 423.25.4.1).

E. Design pressure calculations for the roof area in compliance with ASCE 7-05 and local Building Code requirements. A roof system attachment analysis (Engineer's Report), certifying the system's compliance with ASCE 7-05 wind load requirements, is required before Work begins. This report shall signed and sealed by a Professional Engineer registered in South Carolina and who has been providing such roof system attachment analysis for not less the five consecutive previous years.

F. Samples:
   1. 12 inches by 12 inches square sample of each ply sheet material installed under the exposed membrane.
   2. Vapor retarder.
   3. Roof insulation types used.
   4. Flashing materials.
   5. Fastener types used.
   6. Asphalt type(s) used.
   7. Red rosin sheet.
   8. Submit required number of submittal copies of the manufacturer's current roofing specifications. Product Data Sheets and Material Safety Data Sheets for all products used in the assembly of the roof system.
   9. Manufacturer's complete recommended maintenance procedures for roofing system, including precautions and warnings to prevent damage to, and deterioration of roofing system, and any safety precautions published by the roof system manufacturer.

G. Shop Drawings:
   1. Shop Drawings: Submit required number of submittal copies of shop drawings for all detailing before job start.
      a. Basis of Design: Approved Details by membrane manufacturer only, regardless of membrane manufacturer. All detailing - including but not limited to walls, curbs, drains, penetrations, and edges - shall be installed in strict accordance with prevailing Approved Details by the membrane manufacturer.
      b. Provide complete installation details of roofing, flashing, fastening and insulation, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
   2. Submit fastening calculations for attachment of wood nailers in compliance with FM 1-49.
   3. Submit Roofing Manufacturer's Field Fastener Testing Report in general compliance with Metro Dade Test Protocol PA 105.
   4. Certificates:
      a. Manufacturer's written approval of:
         1.) The roof system to be applied over the submitted insulation

and deck type;
2.) Contract documents;
3.) Applicator and;
4.) Warranty conditions specified.

b. Insulation manufacturer's certification that the product is compatible with the proposed roof system and meets specification requirements.
c. At completion of roof application: Roof membrane field inspection reports; punchlists; as-built drawings.
d. Certification from the membrane manufacturer at job completion confirming the installed roof assembly is in compliance with the approved submittals and warranty provisions.

1.07 QUALITY ASSURANCE

A. Installer Qualifications:
1. Approved by the manufacturer prior to the bidding period and throughout the installation period. Present a copy of certification upon request by the Engineer or Owner.
2. Applicator shall have installed at least five roofs of the same materials and methods specified for this project.
3. Maintain a full-time supervisor/foreman experienced with the specified roof system on-site when roof system application is in progress.
4. Be equipped with a trained crew and with all capital equipment required to perform work of this section.
a. Maintain all equipment and tools in good working order.
b. Provide written safety plan and equipment to the work force and specify, in writing, proper clothing.
5. Shall appoint a safety coordinator who shall be a member of the roofing installation crew. The appointment shall be conveyed to the Building Owner in writing including all qualifications for the appointment.
6. Maintain a daily job log to be kept on site at all times starting fr4om the date of the pre-roofing conference. The job log shall include:
a. Copies of all submittals.
b. Safety coordinator appointment with emergency telephone numbers; fall protection plan and material safety data sheets for all products.
c. Daily crew attendance and time records.
d. A summary of each days work including any photographs or detail revisions.
e. Accident reports.
f. Material delivery records.
g. A visitor registry.

B. Manufacturer Qualifications:
1. Shall have a minimum of 10-year experience manufacturing cold applied SBS modified bitumen roofing membranes systems.
2. Shall submit a current copy of their ISO 9002 manufacturing certification for the plant materials shall be manufactured and shipped from. Additionally, the SEQUENTIAL PRODUCTION LOG and the ISO 9002 PRODUCTION CONTROL RECORD documents shall accompany the

material shipment and made a permanent part of the job record and warranty file.

3. Provide a factory-trained technician to perform final inspections of the roofing system.
4. Provide a warranty upon satisfactory installation of the roofing system.

1.08 PRE-INSTALLATION CONFERENCE

A. Convene with the Owner and other relevant parties at the scheduled pre-installation conference prior to commencing Work at a time and location to be determined.
   1. All parties responsible for Work of this section shall be required to attend including the Engineer, Owner, Contractor and any other trades affected by the roofing Work.
   2. Review installation procedures and coordination required with related work.
   3. Inspect and make notes of job conditions prior to installation:
      a. Minutes shall be taken at the conference and provided to all parties present.
      b. All outstanding issues shall be noted in writing designating the responsible party for follow-up action and the timetable for completion.
      c. Application of roofing system shall not take place until all outstanding issues are resolved to the satisfaction of the Building Owner.

B. Work shall not begin until a NOTICE TO PROCEED is issued at the time of or following the pre-installation conference. This notice shall include information concerning acceptable staging areas; suitable parking and access points; placement of trash conveyances; sanitary requirements; any and all working hour restrictions (day/night, weekends, and holidays); noise restrictions and project complaint procedure between Contractor and Building Owner.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and store in their unopened original packaging, bearing the manufacturer's name, related standards and any other specification or reference accepted as standard.
   1. When stored outdoors, insulation is to be stacked on pallets or dunnage at least four inches above ground level and covered with "non-sweating" tarpaulins.

B. Protect and permanently store materials in a dry, well-vented and weatherproof location. Only materials to be used the same day shall be removed from this location. During winter, store materials in a heated location with a 50 degree F minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

C. Carefully store materials delivered in rolls on-end with selvage edges up, a minimum of 6-inches above grade. Store metal flashings and counter flashings in such a way as to prevent wrinkling, twisting, scratching and other damage.

D. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Engineer.

E. Adhesive storage shall be between the range of above 40 degree F and below 80 degree F. Area of storage shall be constructed for flammable storage.

F. All materials determined to be damaged shall be removed from job site and replaced.

1.10 QUALITY CONTROL

A. Submit certification by the manufacturer that the system materials indicated by Specifications and Drawing Details are acceptable for the deck and surfacing to which they are to be applied.
   1. All detailing – including but not limited to walls, curbs, drains, penetrations, and edges – shall be installed in strict accordance with prevailing Approved Details by the Manfacturer.

B. Inspection: At a minimum, inspections shall be required at start-up and approximately 90% completion. A final inspection shall be required.
   1. Warranty shall be issued upon approval of the installation.
   2. Inspections shall be performed by a Technical Representative employed full-time by the Manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the Manufacturer only.
   3. A final inspection report from the Technical Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, Approved Details and good general roofing practice, shall be provided.

1.11 LABORATORY TESTING

A. Upon request from the Owner or Engineer the membrane manufacturers shall supply, at their expense, the results of mechanical and chemical testing performed on the elastomeric asphalt materials supplied.

B. The tests shall be performed to certify compliance with the standards referenced under this section.

1.12 SITE PROTECTION

A. During roofing work, exposed surfaces of finished walls shall be protected with tarps to prevent damage. Contractor shall assume full responsibility for any damage.

B. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.

C. Site Condition: Complete, to the owner’s satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

1.13 PROJECT ENVIRONMENTAL CONDITIONS

A. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials applied roofing, and building interiors are protected from possible moisture damage or contamination.

B. Temperature Restrictions - cold adhesive: At low temperatures, the specified cold adhesive becomes more viscous, making even distribution more difficult. The optimal temperature of the adhesive at point of application is 70°F (21°C). To facilitate application when ambient temperatures are below 50°F (10°C), store the adhesive and roll goods in a warm place immediately prior to use. Roll or broom the sheets to ensure contact with the underlying adhesive. Suspend application in situations where the adhesive cannot be kept at temperatures allowing for even distribution.

1.14 WARRANTY

A. Upon completion of the work, furnish to the Owner the Manufacturer's written and signed No Dollar Limit (NDL) Roof Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
1.Warranty Period: 20 years from date of acceptance.

B.The Contractor is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
Guarantee Period: 2 years.

2 PRODUCTS

2.01 MANUFACTURERS

A. Obtain products from single manufacturer or from sources recommended by manufacturer for use with roofing system and incorporated in manufacturer's warranty.

B. Acceptable Manufacturers:

Siplast; 1000 E. Rochelle Blvd.; Irving, Texas 75062-3940; Tel: 469-995-2200.

SOPREMA, Inc.; 310 Quadral Dr.; Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Fax: 330-334-4289.

GAF; 1361 Alps Rd.; Wayne, NJ 07470; Tel: 1-973-628-3000.

2.02 Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01600. COLD APPLIED ROOFING SYSTEM

A. Cold Applied SBS Roofing Membrane System: The Work shall involve providing a three-ply SBS membrane system that is adhered to an approved substrate using manufacturer-approved adhesive or compatible, cold asphalt. Work shall include flashing and accessories necessary to complete the system, qualifying for the specified manufacturer's warranty

1. Base Sheet: Nonperforated, asphalt-impregnated and coated glass fiber sheet dusted with fine mineral surfacing on both sides.
2. Modified Base Sheet: ASTM D 6163, Grade S, Type II, SBS modified bitumen membrane with a resilient core of a polyester or fiberglass mat.
3. Membrane Ply Sheet: ASTM D 6163, Grade S, Type II, SBS modified bitumen membrane with a resilient core of a polyester or fiberglass mat.
4. Cap Sheet: ASTM D 6163, Grade G, Heavy-duty, fire-retarding, SBS modified bitumen membrane finish ply with a fiberglass or polyester mat, surfaced with mineral or ceramic granules.
5. Surface: Granulated surface:
6. Color: White (standard).

2.03 ROOF FLASHING SYSTEM

A. Flashing System: Heavy-duty, fire-retarding, SBS modified bitumen membrane finish ply with a fiberglass or polyester mat, surfaced with mineral or ceramic granules.

2.04 MEMBRANE

A. Base Sheet: ASTM D6164, Grade G, Type II polyester or glass fiber reinforced, SBS modified asphalt sheet; granular surfaced: granule color is white.

B. Modified Base Sheet: SBS modified bitumen membrane with a resilient core of a non-woven polyester mat or a glass fiber mat or scrim. Meets or exceeds ASTM D 6163 Type II.

C. Description: Base sheet shall have a non-woven polyester core or fiberglass mat/scrim and polymer-modified asphalt. The top side and under side may have a parting agent.

D. Components: Reinforcement shall be non-woven polyester core or glass fiber mat or scrim. Elastomeric asphalt shall be a mix of selected bitumen and SBS thermoplastic polymer.

E. Application: This membrane is adhered using manufacturer-approved adhesive or cold asphalt.

F. SBS Bitumen Physical Properties:
   1. Average ultimate elongation (73°F): 50%.

G. Membrane Weight and Measurement:
   1. Approximate Weight Per Square of Coverage: minimum 62 lb.
   2. Approximate Thickness: minimum 87 Mils.

H. Membrane Properties:
   1. Tear Strength (average): 120 lbf.
   2. Dimensional Stability: 0.1%.

2.05 FLASHING MEMBRANE

A. Flashing Cap Membrane Ply: ASTM D 6163 Type I Grade G.

B. Basis of Design: Tough, resilient modified bitumen membrane with a core of non-woven polyester mat or a random glass fiber mat coated and impregnated with flexible, SBS polymer-modified asphalt, surfaced with mineral or ceramic granules.
C. Description: Flashing cap membrane ply shall have a non-woven polyester reinforcement or a glass fiber mat impregnated with SBS polymer-modified asphalt. The top side shall be self-protected with colored, ceramic or mineral granules. The underside may have a parting layer.
   1. White Granules.
D. Components: Reinforcement shall be non-woven polyester or fiberglass mat. Elastomeric asphalt shall be a mix of selected bitumen and SBS thermoplastic polymer.
E. Application: This membrane is adhered using manufacturer-approved adhesive or cold asphalt.
F. SBS Bitumen Physical Properties:
   1. Ultimate Average elongation: 50%.
G. Membrane Weight and Measurement:
   1. Approximate Weight Per Square of Coverage: minimum 62 lb.
   2. Approximate Thickness: minimum 87 Mils.
H. Membrane Properties:
   1. Tear Strength (average): 120 lbf.
   2. Dimensional Stability: 0.1%.
   3. Granule Embedment (loss): 2.0 g per sample maximum.

2.06 FIELD CAP PLY MEMBRANE: ASTM D 6164 Type II.

A. Basis of Design: Tough, resilient modified bitumen membrane with a core of non-woven polyester mat or a random glass fiber mat coated and impregnated with flexible, SBS polymer-modified asphalt, surfaced with mineral or ceramic granules.
B. Description: Flashing cap membrane ply shall have a non-woven polyester reinforcement or a glass fiber mat impregnated with SBS polymer-modified asphalt. The top side shall be self-protected with colored, ceramic or mineral granules. The underside may have a parting layer.
C. White Granules.
D. Components: Reinforcement shall be non-woven polyester or fiberglass mat. Elastomeric asphalt shall be a mix of selected bitumen and SBS thermoplastic polymer.
E. Application: This membrane is adhered using manufacturer-approved adhesive or cold asphalt.
F. SBS Bitumen Physical Properties:
   1. Ultimate Average elongation: 50%.
G. Membrane Weight and Measurement:
   1. Approximate Weight Per Square of Coverage: minimum 62 lb.
   2. Approximate Thickness: minimum 87 Mils.
H. Membrane Properties:
   1. Tear Strength (average): 120 lbf.
   2. Dimensional Stability: 0.1%.
   3. Granule Embedment (loss): 2.0 g per sample maximum.

2.07FASTENERS

A. Wood: Roofing nails of galvanized or stainless steel, of length to penetrate the wood by at least 3/4 inch on flashings and parapet walls.

B. Insulation: Mechanical fasteners for securing of insulation to decking shall be approved by the insulation manufacturer for the system specified and shall be Factory Mutual approved and be in compliance with Appendix "E" of FM 4470 for corrosion resistance.

C. The same brand fastener is to be used throughout the work.

D. Number of fasteners and layout shall be as recommended by the manufacturer and per FM Approval Guide for the specified wind uplift resistance.

E. Length of fastener shall be determined by the thickness of the decking and any fill and shall vary with the thickness of the insulation. Fasteners shall be of sufficient length to achieve a minimum of 1 inch penetration.

F. Pre-Assembled Fastener/Plate Combination: Case hardened carbon steel and use specific head, shank and thread diameters, point types and head styles meeting building code and FM approvals for corrosion and simulated wind uplift criteria requirements.

1. Fasteners are designed for the attachment of insulation and membrane to steel (18-24 gauge), wood, and structural concrete.
2. To meet FM requirements, the fastener shall penetrate the steel deck 3/4 inch. Minimum penetration is 1 inch in wood, 3/4 inch through wood that is less than 3/4 inch thick and 1-1/4 inches in concrete.

2.08 MEMBRANE ADHESIVE - FLASHING

A. Manufacturer –approved, single-component, asphalt-modified membrane adhesive for bonding flashing membranes under ambient conditions of 50 degree F and rising.

2.09 MEMBRANE ADHESIVE - FIELD

A. Single-component, polyurethane-modified asphalt membrane adhesive for bonding membranes under ambient conditions of 50 degree F and rising.

2.10 INSULATION ADHESIVE

A. Two-component, 100% solids polyurethane membrane adhesive for bonding insulation board stock without temperature limitations.

2.11 WOOD BLOCKING AND SLEEPERS

A. Nailers, Sleepers, and Blocking Material: Free of wane, shake, decay or checks, and pressure treated with water-borne preservatives for above ground use, AWPB LP-2.

B. Blocking shall be not less than Construction Grade, Southern Pine.

C. Sleepers shall be pressure-treated, Construction Grade, Southern Pine.

2.12 ROOF INSULATION

A. Rigid insulation shall be Polyisocyanurate Foam Board Insulation. Insulation may be applied in multiple layers providing a minimum R value of 5.6 is maintained. Layers shall be no less than 1-1/2 inches or greater than 4 inches thick.

B. Polyisocyanurate:
   1. Density, ÅSTM D 1622: Nominal 2 pcf.
   2. Compressive Strength, ÅSTM D 1621: Minimum 18 lb/sq. inch.
   3. Water Vapor Transmission, ASTM E 96: < 1.0 perm.
   4. Dimensional Stability, ÅSTM D 2126: < 2%, 7 days.
   5. Thermal Resistance, ÅSTM C 518/PIMA CP 101: Report.
   6. Flame Spread, ÅSTM E 84: 25.
   7. Spread of Flame, ÅSTM E 108: Class A or B with roof.
   8. Water Absorption, ASTM C 209: < 1%.
   9. Combined aged R-Value of all Polyisocyanurate layers: Refer to drawings.

C. Asphaltic fiberglass composite cover board shall be used for all adhered membrane assemblies.
   1. Asphalt content: 50% minimum.
   2. Water Absorption, ASTM C209: <1.0 at 2 hrs.
   3. Tensile Strength parallel to surface machine direction, ASTM C209: 1015 psi.
   4. Tensile Strength parallel to surface cross direction, ÅSTM C209: 1015 psi.
   5. Compression strength at 15% deformation: 650 psi.

D. Cant and Tapered Edge Strips.
   1. Construction: Rigid mineral wool cant, coated with a bitumen and lightly sanded surface.
   2. Size: 4 inches face by 4 feet long by 1-1/2 inches thick
   3. Size: 5 inches face by 4 feet long by 2 inches thick.
   4. Density (ÅSTM C 612-09, Actual Density): 11.0 lbs/ft2.

E. Tapered Insulation:
   1. The tapered insulation system shall have a minimum thickness at the tapered edge and an average R-value as shown or indicated on details.
   2. Minimum Thickness: 1 inch.
   3. The roof shall have a slope of not less than that indicated and a minimum thickness as shown or indicated on details.
   4. The tapered boards shall be factory formed units of the specified insulation board.

F. Drain Sumps:
   1. 1/2 / 12 slope tapered perlite and rock wool or equivalent panels for installation at drain sumps.
   2. Drain targets shall be cut from ASTM D 6164 Type II Grade S membrane.
   3. Asphaltic fiberglass composite cover board shall be used for all adhered membrane assemblies.

4. Basis of Design: 1/8 inch and 1/4 inch as indicated or required.

2.13 PRIMER

A. Asphalt Primer:
   1. Primer shall be applied on all dissimilar materials except insulation.
   2. Description: Black bituminous varnish.
   3. Composition: Asphalt modified bitumen with thermoplastic polymers and volatile solvents.

2.14 ASPHALT

A. Asphalt shall be certified in full compliance with the requirements of Type IV asphalt listed in Table 1, ASTM D-312. Each container, or bulk, shipping ticket shall indicate the equiviscous temperature (EVT), the finished blowing temperature (FBT), and the flash point.

3 EXECUTION

3.01. EXAMINATION

A. Do not begin installation until substrates have been properly prepared and verified by the Owner’s representative or the Engineer.

B. If substrate preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding

C. SURFACE INSPECTION AND PREPARATION

D. Before commencing work, all surfaces shall be smooth, clean, dry and free of any debris that would adversely affect the installation of the membrane.

E. Before commencing work, the Owner's representative, together with the Roofing Contractor, shall inspect and approve the deck condition (slopes and nailing supports if applicable) as well as verticals on parapet walls, roof drains, stack vents, vent outlets and others, building joints, etc. If defective conditions exist work shall not begin until corrected or a non-compliance notice shall be submitted to the Contractor so that adjustments can be made. Commencement of work shall imply acceptance of surfaces and conditions.

F. Verify that the work of other trades has been properly completed.

G. Do not install materials in inclement weather.

3.02 SURFACE PREPARATION

A. Wood Deck: Verify securement, flatness, joint spacing and slope of wood decking.
   1. Replace damaged or defective areas prior to commencement of work under this section.
   2. Seal joints of plywood with tape.
   3. Fill knots with latex filler.
   4. Install curbs, blocking, edge strips, nailers, cants, and other components where insulation, roofing, and base flashing are attached

to, in place ready to receive insulation and roofing.

5. Dry out surfaces as necessary to allow all installation to be made on dry surfaces.
6. Sweep decks broom clean. Remove all dust, dirt, and debris.
7. Remove projections that might damage materials.

3.03 HVAC UNITS

A. Employee the services of a licensed mechanical contractor to temporarily remove the HVAC condenser units on the roof.

1. Properly remove refrigerant in accordance with EPA and South Carolina requirements for recycling.

2. Mark units as to location and line set.

3. Disconnect condenser units from line sets providing adequate allowance for re-connection. Protect lineset openings from contamination.

4. Remove or relocated (as required) the condenser units.

5. Store in temporary location at least 4 inches above the ground in area free from potential damage.

B. Remove existing dunnage and repair roof deck as required.

3.04 INSTALLATION

A. Install roofing membrane on clean and dry surfaces, in accordance with the Manufacturer's requirements and recommendations.

B. Perform roofing work on a continuous basis as surface and weather conditions allow.

C. Protect adjoining surfaces against any damage that could result from roofing installation.

D. Install only as much roofing as can be completed in one day. If weather conditions do not permit such completion, exposed areas shall be temporarily weatherproofed to prevent any water infiltration from damaging other materials already installed, in particular, the thermal insulation.

3.05 EQUIPMENT

A. Maintain all equipment and tools in good working order.

3.06 ASPHALT PRIMER APPLICATION

A. Prime all dissimilar surfaces to which asphalt or membrane shall come in contact. Apply at the rate of 100 to 150 sf per gallon. Coat with primer all metal flashings and fascia that come in contact with membrane.

3.07 INSTALLATION OF INSULATION

A. Install insulation in accordance with the Manufacturer's requirements. The insulation shall provide a smooth surface to accept the roof membrane.

B. All board stock shall be installed with joints staggered a minimum of six inches from those of adjoining board stock (insulation installed in-plane) and from those of the board stock installed beneath.

C. No Polyisocyanurate insulation or cover board with a lateral dimension of less than 2 feet by 2 feet nor greater than 4 feet by 4 feet shall be installed.

D. Apply only as much insulation to the roof as can be covered the same day with roofing membrane. At the conclusion of each day's work, seal exposed edges of the insulation. Cut and remove seal upon continuation of the work.

E. Adhere insulation board stock with cold asphalt or Manufacturer-approved adhesive in accordance with Manufacturer's recommendations.

F. Place tapered insulation in accordance with manufacturer's recommendations and according to approved shop drawings (if applicable).

G. Taper boards a minimum distance of 24 inches back from roof drains for positive drainage.

H. Tape joints of insulation in accordance with insulation manufacturer's instructions.

I. No insulation piece shall be less than 12 inches by 12 inches.

3.08 WOOD BLOCKING

A. Install nailers, of minimum one inch thickness and minimum three inches width, as detailed in Dade County Application Standard PA 111 and in compliance with the detail drawings. The maximum unsupported overhang for all applications shall not exceed two inches.

B. Nailers shall be firmly anchored to the deck using fastener devices and spacing in compliance with Dade County Application Standard PA 111. Anchors shall be spaced to provide a design value of not less than 250 lbf/ft for perimeters and 300 lbf/ft at corners after application of the appropriate margin of safety.

C. A 1/2 inch vent space shall be provided between adjacent lengths of nailers.

D. Height of nailers shall match the surface level of the recovery insulation boards and the new roof membrane, or a tapered edge shall be installed to bridge the varying heights.

E. If the compressive strength of the concrete deck is less than 2,500 psi or the concrete thickness is less than 2-1/2 inches, an on-site test shall be carried out to confirm anchor performance.

F. Attachment of wood blocking to standard masonry block, the top two courses shall be filled with ASTM C 270 mortar and allowed to cure for 28 days

G. Attachment of wood blocking to nailable decks (lightweight (aggregate, Cellular, Hybrid), gypsum (plank and poured-in-place) and cementitious wood fiber) shall:
   1. Be capable of being clamped to the underside of the deck or attaching to a structural member; or,
   2. The selected wood blocking anchor can achieve an average withdrawal resistance of not less than 450 lbf with a minimum characteristic value of 390 lbf.

H. Sleepers for HVAC equipment shall:
   1. Be attached to a pressure-treated 2x8 nailer installed on the roof deck in place of EPS insulation.
   2. Consist of three pressure-treated 2x10s nailed together to provide 81/2 inches of clearance above the roof deck.
   3. Use stainless steel fasteners.

3.09 FIELD BASE PLY INSTALLATION

A. Unroll dry field base membrane ply on insulation for alignment. Each strip shall have three inches side laps and six inches end laps.
   1. Begin at low point of roof.
   2. Place membrane so edge lap shall be centered on drain.

B. Begin by unrolling the base membrane to its complete length. Once relaxed for a minimum of twenty minutes, reroll the field membrane ply each end, one end at a time to insure proper alignment, creating two sub-rolls. Apply Manufacturer-approved adhesive or cold asphalt in accordance with the membrane manufacturer's requirements and unroll membrane onto the adhesive and broom the membrane into the adhesive.

C. Application shall provide a smooth surface, free of air pockets, wrinkles, fish mouths or tears.

D. Run field base membrane ply tight up against any vertical surfaces such as curbs, parapets, and vents. (Fasteners are required along any vertical surface).

E. All reinforcing membrane and first flashing membrane ply shall be completed before the field base membrane application may be considered complete.

3.10 FLASHING BASE PLY INSTALLATION

A. Prior to application, the vertical surface receiving the base ply flashing shall receive a coat of primer at the rate of 100 to 150 sf per gallon. This primer coating shall be dry before application of the base sheet flashing.

B. Lay base ply flashing in strips three feet wide to the vertical surfaces, extending onto the flat surface of the roof a minimum of four inches. Side laps shall be three inches and shall be staggered a minimum of four inches with the

laps of the base ply.

C. Apply Manufacturer-approved adhesive or cold asphalt to the substrate in accordance with the manufacturer's requirements, then lay up membrane and firmly press into place and roll with a hand-held roller.

D. Side and end laps shall be sealed using hot air welding techniques.

E. After installation of base ply flashing, check all lap seams on the flashing by running a heated trowel along the edge of the seams.
   1. Thoroughly seal all voids in the corners and seams.

3.11 FIELD TOP PLY INSTALLATION

A. Once the base ply has been completed and does not show any defects, install the top ply.

B. Completely unroll membranes and allow the unrolled membrane to completely relax (typically 20 minutes minimum in warm, sunny conditions). "Relaxed" membranes appear “limp”, “wilted”, or “flaccid”. When installed, the relaxed membranes shall be at, or very near, the same temperature as the base membrane to which it is being applied. The membrane shall relax more rapidly on a sunny day if the bottom of the membrane is exposed to the sunlight. Once completely relaxed, membranes are ready to install.

C. Set membrane in place over the base play as specified (starting at the lowest point on the roof) so as to offset head laps a minimum of two feet and side laps a minimum of twelve inches from those occurring in the base ply membrane. Subsequent rolls shall be aligned with six and one-half inches end laps and three inches side laps.

D. Back-roll the membrane loosely and gently from each end while standing on the rolls, walking backwards, creating two equivalent sub-rolls with 3 feet left flat in the center of the sheet. Care shall be taken to keep rolls aligned.

E. Begin by unrolling the base membrane to its complete length. Once relaxed for a minimum of twenty minutes, reroll the field membrane ply each end, one end at a time to insure proper alignment, creating two sub-rolls. Apply cold asphalt in accordance with the membrane manufacturer's requirements and unroll membrane onto the adhesive and broom the membrane into the adhesive.

F. Application shall provide a smooth surface, free of air pockets, wrinkles, fish mouths or tears.

G. Run field base membrane ply tight up against any vertical surfaces such as curbs, parapets, and vents. (Fasteners are required along any vertical surface).

H. A neater, cleaner installation can be achieved (i.e., bitumen bleed-out is more uniformly controlled) if the three inches side laps are sealed using hot air welding techniques (electric).

I. End laps shall be sealed using hot air welding.

J. Care shall be taken to ensure good alignment of the first roll. A 45 degree cut shall be made on the selvage edge of underlying membrane prior to application to insure a good seal between the membranes.

K. After installation of the top ply, check all lap seams on the top ply using the edge of a hot trowel. Correct any defect.

3.12 FLASHING TOP PLY INSTALLATION

A. Once the base ply has been completed and does not show any defects, install the top ply.

B. Completely unroll membranes and allow the unrolled membrane to completely relax (typically 20 minutes minimum in warm, sunny conditions). "Relaxed" membranes appear “limp”, “wilted”, or “flaccid”. When installed, the relaxed membranes shall be at, or very near, the same temperature as the base membrane to which it is being applied. The membrane shall relax more rapidly on a sunny day if the bottom of the membrane is exposed to the sunlight. Once completely relaxed, membranes are ready to install.

C. Using a chalk line, lay out a straight line on the top ply surface, parallel to the roof edge, six inches inside the roof from the base of the cant strip or right angle to be flashed.

D. Using a hot trowel, heat the surface of the granulated membrane and completely embed the granules. The surface of the modified bitumen shall appear shiny.

E. Apply the top ply flashing down the vertical surface and onto the flat roof to the point of granule embedment and seal the end lap. For ease of application, cut roll into required lengths and use width of roll three feet down length of roof, maintaining specified three inches laps.

F. Thoroughly seal all voids in the corners and seams.

G. Application shall provide a smooth surface, free of air pockets, wrinkles, fish mouths or tears.

H. During installation, avoid asphalt seepage greater than 1/4 inch at seams.

3.13 WATER CUT-OFF

A. At the end of the day's work, and when precipitation is eminent, a water cut-off shall be constructed at all open edges. Construct the cut-off with the same membrane and adhesive or asphalt. Cut-off shall be able to withstand extended periods of wet weather. The water cut-off shall be completely removed prior to resuming the installation of the roofing system.

3.14 CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

B. Remove asphalt markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.15 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch thick.

C. In addition to the plywood listed above, an underlayment of minimum 1/2 inch recover board is required on new roofing.
   1. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.16 FIELD CONTROL

A. Field inspection shall be performed as specified.

3.17 ROOF DRAINS

A. Provide a smooth transition from drain bowl to deck surface.
   1. Taper insulation back from drain a minimum of 24 inches to provide for positive drainage.
   2. Prime all protection board and metal surfaces.
   3. Using a trowel, set a 6 inches wide layer of mastic around the drain bowl edge as water cut-off.

B. Install base membrane with lap centered on bowl ensuring a tight seal at drain.
   1. Install a fully primed, 30 inches square sheet of metal flashing set in mastic.
   2. Hot air weld into place a reinforcing membrane material ("target") cut from roll of ASTM D 6164 Type II Grade S membrane three feet square centered on drain.
   3. Extend membranes 1 inch beyond the inside edge of the drain bowl and temporarily secure with clamping ring.

C. Install field cap membrane ply.
   1. Extend membrane 1 inch beyond the inside edge of the drain bowl.
   2. Position membrane so as to avoid the occurrence of any seams at drains.
   3. Seal off drain by running a hot trowel along the edge and firmly pressing against the rim.

D. Install clamping ring and drain covers supplied with drain.

E. Test all drains for proper flow and watertightness. Correct defects.

3.18 VENT (STACK)

A. Inspect base ply installation and ensure tight seal around pipe.

B. Construct and install over base ply a sheet metal vent sleeve with welded or soldered seams and as per details.
   1. Provide a minimum 5 inches base flange.
   2. Prime all metal surfaces.
   3. Heat metal flange with hot air prior to setting in place and firmly pressing on flange to ensure even contact with roof surface.

C. Hot air weld into place a reinforcing sheet of reinforcing membrane three feet square over the vent.
   1. Seal all seams and edges with a heated trowel.

D. Install field cap membrane ply.
   1. Cut membrane to fit tight against stack sleeve and seal by running a heated trowel around vent base.

E. Install metal vent cap.

3.19 CORNER FLASHING

A. Inside Corner:
   1. Pre-cut all flashing pieces and prime all surfaces prior to installation.
   2. Fabricate gusset 4 inches wide by 8 inches long with a 2 inch triangular tip.
   3. Install gusset into corner using hot air and firmly pressing with a hot trowel.
   4. Set gusset with triangular tip on base ply and wrapping the corner a minimum 2 inches on each side.
   5. Pre-cut base flashing membranes to provide a 4 inches tie-in to roof surface and 3 inches return at corner.
   6. Hot air weld first base flashing sheet into corner over gusset pressing overlap and tie-in firmly into position with a hot trowel.
   7. Hot air weld second base flashing sheet into position with edge tight into corner.
   8. Cut off base tie-in selvage at 45-degree from vertical.
   9. Seal all edges with a hot trowel.
   10. Pre-cut cap membrane flashing plies to provide a 6-inch tie-in to roof surface and 3 inches return at corner.
   11. Hot air weld first cap membrane flashing ply into corner over second base ply pressing overlap and tie-in firmly into position with a damp sponge.
      a) Set all granules into membrane using a hot trowel where flashing overlap occurs.
   12. Hot air weld second cap membrane flashing ply into position with edge tight into corner.
      a) Cut off base tie-in selvage at 45-degree from vertical.
      b) Press flashing firmly into position with a damp sponge.
      c) Seal all edges with hot trowel and sprinkle granules to cover seeping asphalt.

B. Outside Corners:
   1. Pre-cut all flashing pieces and prime all surfaces prior to installation.
   2. Fabricate gusset 4 inches wide by 8 inches long with a 2 inches triangular tip.
   3. Install gusset into corner using hot air and firmly pressing with a hot trowel.
   4. Set gusset with triangular tip on base ply and wrapping the corner a minimum of 2 inches on each side.
   5. Pre-cut base flashing membranes to provide a 4 inches tie-in to roof surface and 3 inches return at corner.
   6. Hot air weld first base flashing sheet into corner over gusset pressing overlap and tie-in firmly into position with a hot trowel.
   7. Hot air weld second base flashing sheet into position with returns wrapped around corners.
   8. Cut off base tie-in selvage at 45-degree from vertical.
      a. Seal all edges with a hot trowel.
      b. Pre-cut cap membrane flashing plies to provide a 6 inches tie-in to roof surface and 3 inches return at corner.
      c. Hot air weld first cap membrane flashing ply into corner over second base ply pressing overlap and tie-in firmly into position with a damp sponge.
      d. Hot air weld second cap membrane flashing ply into position with edge tight into corner.
         1) Cut off base tie-in selvage at 45-degree from vertical.
         2) Press flashing firmly into position with a damp sponge.
         3) Seal all edges with hot trowel and sprinkle granules to cover seeping asphalt.

3.20 SLEEPERS

A. Inspect and verify that all sleepers are properly secured to deck, are level, a minimum 6 inches above finished roof, primed and ready to receive flashings.

B. Base ply membrane is to run horizontally tight up against the vertical curb or cant as required.
   1. When base ply membrane is to act as temporary seal for an extended length of time, carry membrane up vertical surface a minimum of 1 inch.

C. Gusset to be fabricated 4 inches wide by 8 inches long with a 2 inch triangular tip.
   1. Install gusset onto corner using hot air and firmly pressing with a hot trowel.
   2. Set gusset with triangular tip on base ply and wrapping the corner a minimum 2 inches on each side.

D. Install first membrane flashing ply.
   1. Pre-cut flashing to the total sum of sleeper height, thickness and 4 inches tie-in along base with width to match that of sleeper plus 3 inches overlap on each end.
   2. Secure along the side of sleeper with roofing nails.
   3. Cut back corner base selvage at 45-degree angle from vertical.

E. Install top ply.
   1. Pre-cut flashing to the total sum of sleeper height plus 6 inches for base tie-in with width to match that of sleeper plus 3 inches overlap at each end.
   2. Set granules with heated trowel on all surfaces to receive flashing.
   3. Cut flashing flush with the top of sleeper and seal edges with heated trowel.
   4. Cut back corner base selvage at 45-degree angle from vertical.
   5. Firmly press flashing into position using a damp sponge.

F. Provide metal counter flashing.

3.21 ROOF EDGE

A. Install base ply membrane as specified. Carry membrane over roof edge a minimum of 3 inches and temporarily fasten using galvanized roofing nails.

B. Install a continuous metal cleat (material) and edge as detailed.
   1. Prime all dissimilar surfaces prior to membrane or flashing installation.
   2. Flange on edge to be 4 inches minimum.
   3. Nail flange to decking or wood blocking at 4 inches center, staggered, 1 inch from outside edge.

C. Cover edge with a reinforcing strip of base membrane hot air welded into place. Membrane is to carry beyond the metal flange onto base ply a minimum of 4 inches.
   1. Hold the reinforcing strip back from outside edge of metal by 3/4 inch.
   2. Seal all edges with a hot trowel.

D. Install top ply of membrane with the edge tight against the metal and sealed with a hot trowel.

3.22 COPING / PARAPETS

A. Verify all surfaces are properly secured and fully primed, ready to receive flashings.

B. Base ply membrane is to run horizontally tight up to the vertical or cant as required.

C. Install first membrane flashing ply. Carry flashing up the vertical surface, over the top and down the outside face of the parapet a minimum of 3 inches. Fasten along outside edge at 4 inches centers using roofing nails.

D. Install a continuous metal cleat (material) and edge as detailed.
   1. Prime all dissimilar surfaces prior to membrane or flashing installation.
   2. Flange on edge to be 4 inches minimum.
   3. Nail flange to wood blocking at 4 inches center - staggered.
   4. Install top ply as specified.

3.23 HVAC CONDENSERS

A. Using a licensed HVAC Contractor, set condenser units on neoprene pads or equivalent roofing membrane onto sleepers.
   1. Screw condenser cowling to the sleepers using #14 stainless steel screws.
   2. Attach condenser units to the sleepers with two (one for each sleeper) stainless steel hurricane straps screwed into the end of each sleeper with two #14 stainless steel screws.
   3. Re-connect linesets to the appropriate condenser units.
   4. Refill each system with the appropriate amount and type of refrigerant.
   5. Demonstrate to the Owner's representative that HVAC systems function properly.

END OF SECTION 07 55 00

SECTION 07 56 00
FLUID-APPLIED ROOFING AND FLASHING

PART I GENERAL

1.01 SECTION INCLUDES:

A. Preparation of Substrate to Receive Roofing Materials

B. Base Sheet Securement to Prepared Substrate

C. Modified Bitumen Ply Sheet Application to Prepared Substrate

D. Poly(methyl methacrylate) (PMMA)-based Roof Membrane Application

E. PMMA-based Roof Flashing Application

F. Polyurethane elastomeric coating for metal roofs.

1.02 RELATED SECTIONS

A. Section 01 33 00 - Submittals

B. Section 06 10 00 - Rough Carpentry

C. Section 07 60 00 - Sheet Metal Flashing and Trim

1.03 REFERENCE STANDARDS

Agencies which may be used as references throughout this specification section include:

ASTM American Society for Testing and Materials, Philadelphia, PA

FM Factory Mutual Engineering and Research, Norwood, MA

NRCA National Roofing Contractors Association, Rosemont, IL

CERTA Certified Roofing Torch Applicator Program, National Roofing Contractors Association, Rosemont, IL

Midwest Roofing Contractors Association, Lawrence, KS

OSHA Occupational Safety and Health Administration,

UL Underwriters Laboratories, Northbrook, IL

ACI American Concrete Institute, Hills, MI

ICRI International Concrete Repair Institute, Des Plaines, IL

1.04 SUBMITTALS

A. Submittals Prior to Contract Award:

1. Letter from the proposed primary roofing Manufacturer confirming that the bidder is an acceptable Contractor authorized to install the proposed system.

2. Letter from the primary roofing Manufacturer stating that the proposed application will comply with the Manufacturer's requirements in order to qualify the project for the specified guarantee.

B. Submittals Following Contract Award:

Copies of Manufacturer’s product data sheet, detail drawings, and smaples for each type of roofing product.

1.05 QUALITY ASSURANCE

A. Acceptable Contractor: Contractor shall be certified in writing by the roofing materials Manufacturer to install the primary roofing products.

B. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third party auditor under the ISO 9001 audit process.

C. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.

1. Underwriters Laboratories Class II acceptance of the proposed roofing system based upon testing performed in accordance with ASTM E 108 protocol.

2 The roof configuration shall have been successfully tested by an accredited testing laboratory to meet a minimum design windload pressure of 6,000 psf.

D. Project Acceptance: Submit a completed Manufacturer's application for roof guarantee form along with shop drawings of the roofs showing all dimensions, penetrations, and details. The project must receive approval by the membrane Manufacturer, through this process, prior to shipment of materials to the project site.

E. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof membrane/flashing system installation in accordance with this specification. Comply with the latest written application instructions of the Manufacturer of the primary roofing products.

F. Local Regulations: Conform to regulations of public agencies, including any specific requirements of Beaufort and South Carolina adopted building code.

G Manufacturer Requirements: The membrane/flashing system Manufacturer shall provide direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conduct a final inspection upon successful completion of the project.

1.06 GUARANTEE/WARRANTY

A. Roof Membrane Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the Owner with the Manufacturer's twenty-year labor and materials membrane guarantee. The guarantee shall be a term type, without deductibles or limitations on coverage amount, and shall be issued at no additional cost to the Owner. This guarantee shall not exclude random areas of ponding from coverage.

1. 20-year Roof Membrane Guarantee

1.07 PRODUCT DELIVERY STORAGE AND HANDLING

A. Delivery: Deliver materials in the Manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.

B. Storage: Store closed containers in a cool, dry area away from heat, direct sunlight, oxidizing agents, strong acids, and strong alkalis. Do not store resins or catalyst at temperatures below 32°F (0°C) or above 85°F (29°C). Keep away from open fire, flame or any ignition source. Store in a well ventilated area.

C Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Keep away from open fire, flame, or any ignition source. Vapors may form explosive mixtures with air. Avoid skin and eye contact with this material. Avoid breathing fumes when above the Threshold Limit Value (TLV). Do not eat, drink, or smoke in areas where roofing materials are stored or applied.

D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above shall be automatically rejected, removed and replaced at the Contractor's expense.

1.08 PROJECT/SITE CONDITIONS

A. Requirements Prior to Job Start

1. Attend pre-roofing conference with Owner, Engineer, and Manufacturer’s representative.

2. Notification: Give a minimum of 5 days notice to the Owner and Manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.

3. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the work.

4. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NIOSH, NRCA and other industry or local governmental groups. Workers shall wear a long sleeve shirt with long pants and work boots. Workers shall use only butyl rubber or nitrile gloves when mixing or applying PMMA products. Safety glasses with side shields are required for eye protection. Use local exhaust ventilation to maintain worker exposure below the published Threshold Limit Value (TLV). If the airborne concentration poses a health hazard, becomes irritating or exceeds recommended limits, use a NIOSH approved respirator in accordance with OSHA Respirator Protection requirements published under 29 CFR 1910.134. The specific type of respirator will depend on the airborne concentration. A filtering face piece or dust mask is not appropriate for use with this product if TLV filtering levels have been exceeded.

B. Environmental Requirements

1. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.

2. Temperature Restrictions – PMMA-based Materials: Do not apply catalyzed resin materials if there is a threat of inclement weather. Follow the resin Manufacturer's specifications for minimum and maximum ambient, material and substrate temperatures. Do not apply catalyzed resin materials unless ambient and substrate temperatures fall within the resin Manufacturer's published range. For polyurethane coatings, temperature should be above 40°F and more than 5°F above the dew point and rising.

C. Protection Requirements

1. Membrane Protection: Provide protection against staining and mechanical damage for newly applied roofing and adjacent surfaces.

2. No traffic on coated surfaces for at least 48 hours at 75°F and 50% relative humidity or until completely cured.

PART II PRODUCTS

2.01 ROOFING SYSTEM ACCESSORIES

A. Base Sheet and Base Sheet Fasteners

1. Base Sheet for Securement to Nailable Deck Substrates: A fiberglass reinforced, asphalt coated sheet with a polyolefin film backing, having a minimum weight of 20 lb/sq. The sheet shall conform to ASTM D 4601, Type II requirements.

2. Base Sheet Fasteners: corrosion resistant stainless steel.

B. Primers Sealants and Adhesives for Bitumen Products

1. Asphalt Primer: An asphalt, solvent blend conforming to ASTM D 41 Type I or II requirements and meeting local VOC regulations.

2. Elastomeric Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane Manufacturer for use in conjunction with the roof membrane materials. Acceptable types are as follows:

C. Resin Accessories

1. Cleaning Solution/Solvent: A clear solvent used to clean and prepare transition areas of in-place catalyzed resin to receive subsequent coats of resin and to clean substrate materials to receive resin.

2. Preparation Paste: A PMMA-based paste used for remediation of depressions in substrate surfaces or other irregularities.

3 Repair Mortar: A two-component, PMMA-based, aggregate filled mortar used for patching concrete substrates.

4. Thixotropic Agent: A liquid additive used to increase the viscosity of the PMMA-based resin products, allowing the resins to be applied over sloped substrates.

D. PMMA Primers

1 Primer for Horizontal Concrete Substrates: A fast-curing PMMA-based primer for use over horizontal concrete substrates.

E. Accessories

1. Natural Quartz Anti-Skid Surfacing: A natural-colored, kiln-dried, quartz aggregate suitable for broadcast into a PMMA-based resin wearing layer.

F. Polyurethane Coating Accessories:

1. Primer: zinc-rich primer suitable for application over previously coated metal roofs.

2. Flashing tape.

2.02 ROOFING SYSTEM COMPONENTS

A. Roofing Membrane Assembly: A roof membrane assembly consisting of one ply of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane applied over a prepared substrate, covered with a liquid applied, flexible, PMMA-based monolithic membrane formed by the combination of resin and fleece fabric. The reinforcement mats in the SBS ply shall be impregnated/saturated and coated each side with an SBS modified bitumen blend. The cross sectional area of the SBS sheet material

shall contain no oxidized or non-SBS modified bitumen. The back of the modified bitumen base ply shall be coated with factory applied polymer modified asphalt self-adhesive coating covered with a removable film. The top surface of the modified bitumen ply sheet shall be coated with a white acrylic coating to enhance resin bond and to minimize surface temperatures. The composite roof system, including SBS modified bitumen ply sheet and reinforced PMMA, shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14F (-10C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147.

1. Self-Adhesive Modified Bitumen Ply and Flashing Reinforcing Sheet

   a. Thickness (avg): 102 mils (2.6 mm) (ASTM D 5147)

   b. Thickness (min): 98 mils (2.5 mm) (ASTM D 5147)

   c. Weight (min per 100 ft^2 of coverage): 69 lb (3.4 kg/m^2)

   d. Maximum filler content in elastomeric blend: 35% by weight

   e. ow temperature flexibility @ -15° F (-26° C) - PASS (ASTM D 5147)

   f. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)

   g. Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)

   h. Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)

   i. Dimensional Stability (max): 0.1% (ASTM D 5147)

   j. Compound Stability (min - sheet): 250°F (121°C) (ASTM D 5147)

   k. Compound Stability (min – adhesive coating): 212°F (100°C) (ASTM D 5147)

   l. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)

   m. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria

   n. Back Surfacing: polyolefin release film

   o. Top Surfacing: factory applied acrylic coating

2. Resin for Field Membrane Construction: A flexible, PMMA-based resin for use in combination with fleece fabric to form a monolithic, reinforced roofing membrane.. The values listed below are based upon a 90 mil (2.3 mm) resin thickness.

a. Thickness (avg): 90 mils (2.3 mm) at 0.31 kg/ft² (3.3 kg/m²) coverage rate (ASTM D 5147, section 5).

b. Weight (min per 100 ft² of coverage): 68.4 lb (3.3 kg/m²)

c. Peak Load (avg) @ 73°F (23ºC): 70 lbf/in (12.3 kN/m) (ASTM D 5147 section 6)

d. Peak Load (avg) @ 73°F (23ºC): 90 lbf/inch (15.8 kN/m) (ASTM D 412, dumbbell)

e. Elongation at Peak Load (avg) @ 73°F: 35% (ASTM D 5147, section 6)

f. Elongation at Peak Load (avg) @ 73°F: 35% (ASTM D 412, dumbbell)

g. Shore A Hardness (avg): 81 (ASTM D 2240)

h. Water Absorption, Method I (24h @ 73°F): 0.8% (ASTM D 570)

i. Water Absorption, Method II (48h @ 122°F): 1.2% (ASTM D 570)

j. Low temperature flexibility @ 23 F (-5°C): PASS (ASTM D 5147, section 11)

k. Dimensional Stability (max): 0.15% (ASTM D 5147, section 10)

l. Tear Strength (avg): 90 lbf (0.4 kN) (ASTM D 5147, section 7)

m. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)

3. Fleece for Membrane Reinforcement: A non-woven, 110 g/m², needle-punched polyester fabric reinforcement as supplied by the membrane system Manufacturer.

B. Flashing Membrane Assembly: A flashing membrane assembly consisting of a liquid applied, flexible, monolithic membrane formed by the combination of PMMA-based resin and fleece fabric.

1. Resin for Flashing Applications: A flexible, PMMA-based resin combined with a thixotropic agent for use in combination with non-woven, 110 g/m², needle-punched polyester fabric reinforcement to form a monolithic, reinforced flashing membrane.

2. Fleece for Flashing Reinforcement: A non-woven, 110 g/m², needle-punched polyester fabric reinforcement as supplied by the membrane system Manufacturer.

C. Polyurethane coating suitable for a seamless, fully-adhered, fluid-applied roof coating system on a metal roof application, such as Elasta-Gard, or equivalent.

PART III EXECUTION

3.01 SUBSTRATE EXAMINATION/PREPARATION

A. General: Ensure that substrates are free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, bituminous products, release agents, laitance, paint, loose particles/friable matter, rust or any other material that would be detrimental to adhesion of the catalyzed primer and/or resin to the substrate. Some surfaces may require scarification, shotblasting, or grinding to achieve a suitable substrate.

B. Concrete Substrate Requirements: Structural concrete shall be cured a minimum of 28 days in accordance with ACI-308, have a minimum compressive strength of 3,500 psi (24 N/mm2) and have a moisture content that conforms with the waterproofing system Manufacturer's requirements prior to commencement of work.

C. Moisture Content Evaluation: Evaluate the level of moisture in the substrate to determine that the moisture content is acceptable for application of the specified waterproofing system. Concrete substrates shall have a maximum moisture content of 6% by weight and a maximum internal relative humidity of 75%.

D. Adhesion Testing for Concrete Substrates to Receive Resin Materials: Test the concrete substrate using a device conforming to ASTM D 4541 using a 50 mm dolly adhered with the specified catalyzed primer. Utilize the same concrete preparation methods as that which will be used prior to application of the waterproofing for areas to be evaluated for adhesion. Ensure that a minimum adhesion value of 220 psi is obtained before application of the PMMA-based primer. If multiple areas or substrates are involved in the scope of work, evaluate each to determine suitability. Maintain testing/evaluation records.

E. Preparation of Existing Concrete Substrates to Receive Resin Materials: Existing concrete substrates shall have a minimum compressive strength of 3,500 psi (24 N/mm2). Following evaluation for moisture content and confirmation that the moisture content is at an acceptable level, scarif concrete surfaces to provide a sound substrate free from laitance and residue from bitumen, coal tar, primer, coatings, adhesives, sealer or any material that may inhibit adhesion of the specified primer. Generate a concrete surface profile of CSP-2 to CSP-4 as defined by the ICRI. Grinding may be used as a preparation method for localized areas that cannot be reached by a shot blasting equipment provided that a surface can be prepared to a CSP-2 to CSP 4. Repair spalls and voids on vertical or horizontal surfaces using the specified primer and preparation paste.

F. Preparation of Concrete Substrates to Receive a Modified Bitumen Base Ply: Concrete decks shall be fully cured, dry, frost-free, broom-cleaned, free from release/curing agents and smooth enough to allow for full adhesion of the ply sheet. Ensure that the moisture content is at a level suitable for proper application of the primer and roofing system components. Level projections or depressions that may interfere with proper application of roofing system components. Prime the deck with the specified primer at the rate required by the primer Manufacturer and allow to dry thoroughly.

G. Repair and Leveling of Concrete Substrate to Receive Resin Materials: Before application of the roofing membrane, and after priming, fill all joints, cracks, voids, fractures, depressions, small indentations, and low areas in the substrate using the specified paste or repair mortar.

H. Static Crack and Cold Joint Preparation: Clean cracks/joints and treat with the specified PMMA primer. Fill the cracks and joints using the specified preparation paste prior to membrane/flashing application.

I. Self-Adhered" Ply Sheet Application: Unroll the base ply, and set the roll into place utilizing minimum 3 inch side and end laps. Fold one end of the roll back onto itself by 24 inches. Peel the release film off of the back of the 24 inch end section of the sheet and lay into place, pressing the 24 inch end section of the sheet firmly into place over the substrate. Pull the release film free from the underside of the remainder of the sheet while pressing the material into place with a follow tool as the film is being removed, leaving the end laps unadhered. Prior to adhering the end laps, cut a dog ear angle at each end lap on overlapping selvage edges. Heat weld end laps, ensuring that the self-adhesive blend on the underside of the overlapping sheet and the top surface of the underlying sheet flow into a layer of continuously bonded or fused modified bitumen. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet. Laps of the base ply shall not be left exposed overnight. The base ply application shall be immediately followed by the application of the finish ply. A phased application between the base and finish plies is not approved. In cases where rapid onset of inclement weather occurs, seal exposed lap edges with a hot-air welder and trowel.

J. Ply Sheet Application: Bond the modified bitumen ply sheet to the prepared substrate, utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the asphalt applicator. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet. Follow Manufacturer’s specifications regarding maximum exposure periods prior to application of the liquid-applied finish membrane.

3.02 MIXING OF RESIN PRODUCTS

A. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin Manufacturer. Calculate the amount of catalyst powder needed using the Manufacturer's guidelines and add the pre-measured catalyst to the resin component. Mix again for the time period specified by the resin Manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.

3.03 PREPARATION PASTE AND PRIMER MIXING/APPLICATION

A. Primer Application: Apply primer resin using a roller or brush at the rate specified by the primer Manufacturer over qualified and prepared substrates. Do not let resin pool or pond. Do not under-apply or over-apply primers as this may interfere with proper primer catalyzation. Make allowances for waste, including saturation of roller covers and application equipment.

B. Paste Application: Apply catalyzed preparation paste using a trowel over prepared and primed substrates. Before application of any resin product over cured paste, wipe the surface of the paste using the specified cleaner/solvent and allow to dry. Treat the surface again if not followed up by resin application within 60 minutes.

3.04 FLASHING AND FIELD MEMBRANE APPLICATION

A. Base Flashing Application

1. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to cure.

2. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.

3. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin Manufacturer. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin Manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch). Remove the tape before the catalyzed resin cures. Make allowances for waste, including saturation of roller covers and application equipment.

4. Should work be interrupted for more than 12 hours or the surface of the cured resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.

B. Field Membrane Application

1. Using the specified cleaner/solvent, wipe flashing membrane surfaces to be lapped with field membrane. Allow the surface to dry for a minimum 20 minutes before continuing work.

2. Apply an even, generous base coat of field membrane resin to prepared surfaces using a roller at the rate specified by the resin Manufacturer. Work

the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin Manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch (6 mm)). Make allowances for waste, including saturation of roller covers and application equipment. Allow 2 hours cure time prior to exposing the membrane to foot traffic.

C. Color Finish Application

1. Ensure that the field and flashing membrane and has been in place for a minimum 2 hours. Using the specified cleaner/solvent, wipe field membrane surfaces to receive the color finish layer. Allow the surface to dry for a minimum 20 minutes before continuing work.

2. Apply an even top coat of catalyzed color finish resin at the rate specified by the resin Manufacturer. Allow 2 hours cure time prior to exposing the membrane to foot traffic.

3.05 WALKTREAD/SKID RESISTANT SURFACING

A. Quartz/Granule Anti-Skid Application: Mask the areas to receive the anti-skid system using masking tape. Apply an additional top coat of catalyzed roof resin at the rate specified by the resin Manufacturer, immediately broadcast quartz/granules to refusal, and allow to cure. Remove tape before the resin cures. Apply a layer of catalyzed color coat over quartz surfaces. Allow 2 hours cure time prior to exposing the membrane to foot traffic.

3.06 FIELD QUALITY CONTROL AND INSPECTIONS

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

B. Notification Of Completion: Notify the Manufacturer by means of Manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

C. Final Inspection

1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the Manufacturer's representative. Complete, sign, and mail the punch list form to the Manufacturer's headquarters.

D. Issuance Of The Guarantee: Complete all post installation procedures and meet the Manufacturer's final endorsement for issuance of the specified guarantee.

END OF SECTION 07 56 00

SECTION 07 60 00

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 DESCRIPTION

Formed sheet metal work for wall and roof flashing, copings, roof edge metal, fasciae, drainage specialties, and formed HVAC line set entry covers are specified in this section.

1.02 RELATED WORK

A. Membrane flashing at membrane roofs: Section 07550, SBS MODIFIED BITUMEN MEMBRANE ROOFING.

B. Flashing and field membrane application: Section 07560, FLUID-APPLIED ROOFING AND FLASHING.

1.03 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only. Editions of applicable publications current on date of issue of bidding documents apply unless otherwise indicated.

B. American National Standards Institute/Single-Ply Roofing Institute (ANSI/SPRI): ANSI/SPRI ES-1-03 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems

C. American Architectural Manufacturers Association (AAMA):

AAMA 621 Voluntary Specification for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates

D. ASTM International (ASTM):

A167-99(R2009) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

A653/A653M-09 Steel Sheet Zinc-Coated (Galvanized) or Zinc Alloy Coated (Galvanized) by the Hot- Dip Process

B32-08 Solder Metal

B370-09 Copper Sheet and Strip for Building Construction

D412-06 Vulcanized Rubber and Thermoplastic Elastomers-Tension

D1187-97(R2002) Asphalt Base Emulsions for Use as Protective Coatings for Metal

D1784-08 Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

D3656-07 Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns
D4586-07 Asphalt Roof Cement, Asbestos Free

E. Sheet Metal and Air Conditioning Contractors National Association SMACNA): Architectural Sheet Metal Manual.

F. National Association of Architectural Metal Manufacturers (NAAMM): AMP 500-06 Metal Finishes Manual

G. Federal Specification (Fed. Spec): A-A-1925A Shield, Expansion; (Nail Anchors) UU-B-790A Building Paper, Vegetable Fiber

H. International Code Commission (ICC): International Building Code, 2006 Edition, with South Carolina amendments and adoptions.

1.04 PERFORMANCE REQUIREMENTS

Wind Design Standard: Fabricate and install copings and roof-edge flashings tested per ANSI/SPRI ES-1 to resist design pressure indicated on Drawings.

1.05 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Shop Drawings: For all specified items, including:

1. Flashings
2. Copings
3. Fascia-cant
4. Line set entrance covers

C. Manufacturer's Literature and Data: For all specified items, including:

1. Two-piece counterflashing
2. Nonreinforced, elastomeric sheeting
3. Fascia-cant

PART 2 - PRODUCTS

2.01 FLASHING AND SHEET METAL MATERIALS

A. Stainless Steel: ASTM A167, Type 302B, dead soft temper.

B. Copper ASTM B370, cold-rolled temper except where soft temper is required for forming.

C. Galvanized Sheet: ASTM, A653.

D. Anodized aluminum to match existing fascia metal.

E. Nonreinforced, Elastomeric Sheeting: Elastomeric substances reduced to thermoplastic state and extruded into continuous homogenous sheet 0.056 inch thick. Sheeting shall have not less than 1,000 psi tensile strength and not more than seven percent tension-set at 50 percent elongation when tested in accordance with ASTM D412. Sheeting shall show no cracking or flaking when bent through 180 degrees over a 1/32 inch diameter mandrel and then bent at same point over same size mandrel in opposite direction through 360 degrees at temperature of -20 °F.

2.02 FLASHING ACCESSORIES

A. Solder: ASTM B32; flux type and alloy composition as required for use with metals to be soldered.

B. Rosin Paper: Fed-Spec. UU-B-790, Type I, Grade D, Style 1b, Rosin-sized sheathing paper, weighing approximately 3 Kg/10 m^2(6 lbs/100 sf).

C. Bituminous Paint: ASTM D1187, Type I.

D. Fasteners:

1. Use copper, copper alloy, bronze, brass, or stainless steel for copper, and stainless steel for stainless steel. Use galvanized steel or stainless steel for galvanized steel.

2. Nails:

a. Minimum diameter for copper nails: 0.109 inch.

b. Minimum diameter for stainless steel nails: 0.095 inch and annular threaded.

c. Length to provide not less than 7/8 inch penetration into anchorage.

3. Rivets: Not less than 1/8 inch diameter.

4. Expansion Shields: Fed Spec A-A-1925A.

E. Sealant: As specified in Section 07 92 00, JOINT SEALANTS for exterior locations.

F. Insect Screening: ASTM D3656, 18 by 18 regular mesh.

G. Roof Cement: ASTM D4586.

2.03 SHEET METAL THICKNESS

A. Except as otherwise shown or specified use thickness or weight of sheet metal as follows.

B. Concealed Locations (Built into Construction):

1. Copper: 10 oz minimum 0.013 inch thick.

2. Stainless steel: 0.010 inch thick.

3. Galvanized steel: 0.021 inch thick.

C. Exposed Locations: Stainless steel: 0.015 inch.

D. Thickness of galvanized steel is specified with each item.

2.04 FABRICATION, GENERAL

A. Jointing:

1. In general, copper and stainless steel joints, except expansion and contraction joints, shall be locked and soldered or welded as appropriate.

2. Jointing of copper over 20 oz weight or stainless steel over 0.018 inch thick shall be done by lapping, riveting and soldering.

3. Joints shall conform to following requirements:

a. Flat-lock joints shall finish not less than 3/4 inch wide.

b. Lap joints subject to stress shall finish not less than one inch wide and shall be soldered and riveted.

c. Unsoldered lap joints shall finish not less than 4 inches wide.

4. Flat and lap joints shall be made in direction of flow.

5. Soldering:

   a. Pre tin both mating surfaces with solder for a width not less than 1 1/2 inches of uncoated copper and stainless steel.

   b. Wire brush to produce a bright surface before soldering lead coated copper.

   c. Completely remove acid and flux after soldering is completed.

C. Cleats:

1. Fabricate cleats to secure flashings and sheet metal work over 12 inches wide and where specified.

   a. Provide cleats for maximum spacing of 12 inch centers unless specified otherwise.

   b. Form cleats of same metal and weights or thickness as the sheet metal being installed unless specified otherwise.

   c. Fabricate cleats from 2 inch wide strip. Form end with not less than 3/4 inch wide loose lock to item for anchorage. Form other end of length to receive nails free of item to be anchored and end edge to be folded over and cover nail heads.

2. Edge Strips or Continuous Cleats:

   a. Fabricate continuous edge strips where shown and specified to secure loose edges of the sheet metal work.

   b. Except as otherwise specified, fabricate edge strips of minimum 0.0276 inch thick galvanized steel.

   c. Use material compatible with sheet metal to be secured by the edge strip.

   d. Fabricate in 10 feet maximum lengths with not less than 3/4 inch loose lock into metal secured by edge strip.

   e. Fabricate Strips for fascia anchorage to extend below the supporting wood construction to form a drip and to allow the flashing to be hooked over the lower edge at least 3/4-inch.Fabricate anchor edge maximum width of 3 inches or of sufficient width to provide adequate bearing area to insure a rigid installation 0.0396 inch thick galvanized steel.

D. Edges:

1. Edges of flashings concealed in masonry joints opposite drain side shall be turned up 1/4 inch to form dam, unless otherwise specified or shown otherwise.

2. Finish exposed edges of flashing with a 1/4 inch hem formed by folding edge of flashing back on itself when not hooked to edge strip or cleat. Use 1/4 inch minimum penetration beyond wall face with drip for through-

wall flashing exposed edge.

3. All metal roof edges shall meet requirements of IBC, current edition.

G. Metal Options:

1. Where options are permitted for different metals use only one metal throughout.
2. Stainless steel may be used in concealed locations for fasteners of other metals exposed to view.

2.05 FINISHES

A. Use same finish on adjacent metal or components and exposed metal surfaces unless specified or shown otherwise.

B. In accordance with NAAMM Metal Finishes Manual AMP 500, unless otherwise specified.

C. Finish exposed metal surfaces as follows, unless specified otherwise:

1. Copper: Mill finish.
2. Stainless Steel: Finish No. 2B or 2D.
3. Steel and Galvanized Steel:
4. Manufacturer's finish: Fluorocarbon Finish: AAMA 621, high performance organic coating.
5. Anodized aluminum

2.06 STEP FLASHING

A. Stainless steel, unless specified otherwise.

B. Vertical leg shall be two inches longer than is customary.

2.07 COUNTERFLASHING (CAP FLASHING OR HOODS)

A. Stainless steel, unless specified otherwise.

B. Fabricate to lap base flashing a minimum of 4 inches with drip:

1. Form lock seams for outside corners. Allow for lap joints at ends and inside corners.
2. In general, form flashing in lengths not less than 8 feet and not more
3. than 10 feet.
4. Two-piece, lock in type flashing may be used in-lieu-of one piece counter-
5. flashing.
6. Manufactured assemblies may be used. Where counterflashing is installed at new work use an integral flange at the top designed to be extended into the masonry joint or reglet in concrete.

C. One-piece Counterflashing:

1. Back edge turned up and fabricate to lock into reglet in concrete.
2. Upper edge formed to extend full depth of masonry unit in mortar joint with back edge turned up 1/4 inch.

D. Two-Piece Counterflashing:

1. Receiver to extend into masonry wall depth of masonry unit with back edge turned up 1/4 inch and exposed edge designed to receive and lock counterflashing upper edge when inserted.
2. Counterflashing upper edge designed to snap lock into receiver.

E. Surface Mounted Counterflashing; one or two piece:

1. Use at surfaces where flashing can not be inserted in vertical surface.
2. One piece: Fabricate upper edge folded double 2 1/2 inches with top 3/4 inch bent out to form "V" joint sealant pocket with vertical surface. Perforate flat double area against vertical surface with horizontally slotted fastener holes at 16 inch centers between end holes. Option: One piece surface mounted counter-flashing (cap flashing) may be used. Fabricate as detailed on Plate 51 of SMACNA Architectural Sheet Metal Manual.
3. Two pieces: Fabricate upper edge to lock into surface mounted receiver. Fabricate receiver joint sealant pocket on upper edge and lower edge to receive counterflashing, with slotted fastener holes at 16 inch centers between upper and lower edge.

F. Pipe Counterflashing:

1. Form flashing for water-tight umbrella with upper portion against pipe to receive a draw band and upper edge to form a "V" joint sealant receiver approximately 3/4 inch deep.
2. Fabricate 4 inch over lap at end.
3. Fabricate draw band of same metal as counter flashing. Use
4. 0.013 inch thick stainless steel.
5. Use stainless steel bolt on draw band tightening assembly.
6. Vent pipe counter flashing may be fabricated to omit draw band and turn down one inch inside vent pipe.

2.08 COPINGS

A. Fabricate of 0.276 inch thick prefinished galvanized steel sheets 8 to 10 feet long.

B. Fabricate coping to profile shown.

C. Use continuous edge strips with drips at bottom edges on exterior wall side. Use slotted holes for fasteners on roof wall side if continuous cleats or edge strips are not used.

D. Form joints between sections with either alternate 4 or 5 as shown on plate 68, SMACNA, unless shown otherwise.

E. Fabricate corners with mitered joints, locked and sealed.

F. Fabricate ends of coping terminating at vertical building surfaces to form a slot for the installation of sealant.

G. Fabricate exterior ends of coping closures of same appearance as exterior wall side.

2.09 REGLETS

A. Fabricate reglets of one of the following materials: Stainless steel, not less than 0.012 inch) thick.

B. Fill open-type reglets with fiberboard or other suitable separator, to prevent crushing of the slot during installation.

C. Bend edges of reglets for setting into concrete to an angle of not less than 45 degrees, and make wide enough to provide firm anchorage in the concrete.

D. Fabricate reglets for building into horizontal masonry mortar joints not less than 3/4 inch deep, nor more than one inch deep.

E. Fabricate mitered corners, fittings, and special shapes as may be required by details.

F. Reglets for concrete may be formed to receive flashing and have a 3/8 inch, 45 degree snap lock.

2.10 LINE SET ENTRY COVERS

A. Fabricate HVAC line set entry covers for each line set or closely located group of line sets entering the building through the fascia metal from the low-slope roof HVAC deck.

B. Design openings around line sets to prevent entry of pests, wind-blown rain, or dust.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General:

1. Install flashing and sheet metal items as shown in Sheet Metal and Air Conditioning Contractors National Association, Inc., publication, ARCHITECTURAL SHEET METAL MANUAL, except as otherwise shown or specified.
2. Apply Sealant as specified in Section 07 92 00, JOINT SEALANTS.
3. Apply sheet metal and other flashing material to surfaces which are smooth, sound, clean, dry and free from defects that might affect the application.
4. Remove projections which would puncture the materials and fill holes and depressions with material compatible with the substrate. Cover holes or cracks in wood wider than 1/4 inch with sheet metal compatible with the roofing and flashing material used.
5. Coordinate with masonry work for the application of a skim coat of mortar to surfaces of unit masonry to receive flashing material before the application of flashing.
6. Confine direct nailing of sheet metal to strips 12 inch or less wide. Nail flashing along one edge only. Space nail not over 4 inches on center unless specified otherwise.
7. Install bolts, rivets, and screws where indicated, specified, or required in accordance with the SMACNA Sheet Metal Manual. Space rivets at 3 inch centers in two rows in a staggered position. Use neoprene washers under fastener heads when fastener head is exposed.

8. Coordinate with roofing work for the installation of metal base flashings and other metal items having roof flanges for anchorage and watertight installation.
9. Nail continuous cleats on 3 inch on centers in two rows in a staggered position.
10. Nail individual cleats with two nails and bend end tab over nail heads. Lock other end of cleat into hemmed edge.
11. Install flashings in conjunction with other trades so that flashings are inserted in other materials and joined together to provide a water tight installation.
12. Where required to prevent galvanic action between dissimilar metal isolate the contact areas of dissimilar metal with sheet lead, waterproof building paper, or a coat of bituminous paint.
13. Isolate aluminum in contact with dissimilar metals other than stainless steel or other metal compatible with aluminum by:
    a. Paint dissimilar metal with a coat of bituminous paint.
    b. Apply an approved caulking material between aluminum and dissimilar metal.

3.04 STEP FLASHING

A. Install step flashing along walls and chimneys in place of continuous flashing.

B. Begin at the bottom with corner flashing as appropriate.

C. Nail flashing to roof deck, but not to both deck and chimney.

D. Lap flashing by a minimum of two inches. Seal lap with a bead of sealant.

3.05 COUNTERFLASHING (CAP FLASHING OR HOODS)

A. General:

1. Install counterflashing over and in conjunction with installation of base flashings, except as otherwise specified or shown.
2. Install counterflashing to lap base flashings not less than 4 inches.
3. Install upper edge or top of counterflashing not less than 9 inch above top of the roofing.
4. Lap joints not less than 4 inches. Stagger joints with relation to metal base flashing joints.
5. Use surface applied counterflashing on new work where not possible to integrate into item.
6. When fastening to concrete or masonry, use screws driven in expansion shields set in concrete or masonry. Use screws to wood and sheet metal. Set fasteners in mortar joints of masonry work.

B. One Piece Counterflashing:

1. Where flashing is installed at new masonry, coordinate to insure proper height, embed in mortar, and end lap.
2. Where flashing is installed in reglet in concrete insert upper edge into reglet. Hold flashing in place with lead wedges spaced not more than 8 inch apart. Fill joint with sealant.
3. Where flashing is surface mounted on flat surfaces.
    a. When top edge is double folded anchor flat portion below sealant "V" joint with fasteners spaced not over 16 inch on center:

1) Locate fasteners in masonry mortar joints.
2) Use screws to sheet metal or wood.
3) Fill joint at top with sealant.

b. Where flashing or hood is mounted on pipe.
1) Secure with draw band tight against pipe.
2) Set hood and secure to pipe with a one by 1 x 1/8 inch bolt on stainless steel draw band type clamp, or a stainless worm gear type clamp.
3) Completely fill joint at top with sealant.

C. Two-Piece Counterflashing:

1. Where receiver is installed at new masonry coordinate to insure proper height, embed in mortar, and lap.
2. 2. Surface applied type receiver:
   a. Secure to face construction in accordance, with manufacturers instructions.
   b. Completely fill space at the top edge of receiver with sealant.
   c. Insert counter flashing in receiver in accordance with fabricator or manufacturer's instructions and to fit tight against base flashing.

D. When counter flashing is a component of other flashing install as shown.

3.06 REGLETS

A. Install reglets in a manner to provide a watertight installation.

B. Locate reglets not less than 9 inch nor more than 16 inch above roofing, and not less than 5 inch nor more than 13 inch above cant strip.

C. Butt and align end joints or each section of reglet and securely hold in position until concrete or mortar are hardened:

1. Coordinate reglets for anchorage into concrete with formwork construction.
2. Coordinate reglets for masonry to locate horizontally into mortar joints.

3.07 COPINGS

A. General:

1. On walls topped with a wood plank, install a continuous edge strip on the front and rear edge of the plank. Lock the coping to the edge strip with a 3/4 inch loose lock seam.
2. Where shown turn down roof side of coping and extend down over base flashing as specified for counter-flashing. Secure counter-flashing to lock strip in coping at continuous cleat.

B. Galvanized Steel Copings:

1. Join ends of sheets by a 3/4 inch locked and sealed seam, except at intervals of 32 feet, provide a 1 1/2 inch loose locked expansion joint filled with sealant or mastic.
2. At straight runs between 24 feet and 64 feet locate expansion joint at center.
3. At straight runs that exceed 32 feet and form the leg of a corner locate the expansion joint not more than 16 feet from the corner.

3.08 LINE SET ENTRY COVERS

A. Install HVAC line set entry covers over individual or grouped line sets entering the Marine Science building from the HVAC roof deck.

E N D of Section 07 60 00

SECTION 07 92 13

EXTERIOR SEALANT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Joint sealants designed for exterior, above-grade applications.

B. Related Sections:

1. None.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Fillet joint at angle between top of EIFS band and adjacent vertical surface.
2. Sealing reglets and profile terminations on Center for the Arts metal roof.

B. Performance Requirements: ASTM C 920, Type M, Grade NS, Class 100/50, Use NT, M, A, G and O.

1.3 SUBMITTALS

A. Comply with Section 01 33 00.

B. Product Data: Submit Manufacturer's product data sheets and MSDS on each product.

C. Samples:

1. Initial Selection Purposes: For each product exposed to view, submit Manufacturer's standard bead. Samples consisting of strips of actual products showing full range of colors available.
2. Verification: 2 sets of each type and color of joint sealant required. Install joint sealant samples in 1/2 inch wide joints formed between two 6 inch long strips of material matching appearance of exposed surfaces adjacent to joint sealants.

D. Submit laboratory tests or data validating product compliance with performance criteria specified.

1.4 QUALITY ASSURANCE

A. Comply with Section 01 40 00.

B. Qualifications:

1. Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this Section.
2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.

C. Installer Qualifications: Qualified to perform Work specified by reason of experience or training provided by product manufacturer.

1.5 PREINSTALLATION MEETING

A. General: A general pre-installation meeting shall be held prior to the start of sealant or any other work on the Beaufort Campus.

B. Timing: The meeting shall take place before or at the start of the roofing installation.

C. Attendees: Meeting to be called for by the Contractor. Meeting's mandatory attendees shall include the Contractor, Owner's representative, Engineer's representative, and the General Contractor's representative.

D. Topics: Contractor shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 01 60 00.

B. Deliver and store products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.

C. Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight per manufacturer's recommendations.

D. Condition products to approximately 60 degrees F (16 degrees C) to 70 degrees F (21 degrees C) for use per manufacturer's recommendations.

E. Handle products with appropriate precautions and care as stated on Material Safety Data Sheet.

1.7 PROJECT CONDITIONS

A. Do not use products under conditions of precipitation, or in inclement or freezing weather. Verify that substrates are clean, dry, and frost-free. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions per Manufacturer's recommendations if application during inclement weather occurs.

1.8 WARRANTY

A. Provide to the Owner Manufacturer's 5-year, standard material warranty.

B. Include coverage for replacement of sealant materials which fail to achieve water tight seal, exhibit loss of adhesion or cohesion, or do not cure, provided sealant has been installed per manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from the following manufacturer:

1. BASF Building Systems; 889 Valley Park Drive; Shakopee, MN 55379; Tel: 800- 433-9517

2. Henkel Corporation; Rocky Hill, CT 06067; Tel: 800-624-7767

3. Sto; 3800 Camp Creek Parkway, SW, Bldg 1400, Suite 120; Atlanta, GA 30331; Tel: 800-221-2397

B. Substitutions: Comply with Section 01 60 00.

C. Specifications and Drawings are based on manufacturer's proprietary literature from BASF Building Systems. Other manufacturers shall comply with minimum levels of material, color selection, and

detailing indicated in Specifications or on Drawings. Engineer will be sole judge of appropriateness of substitutions.

2.2 MATERIALS

A. A premium-grade, high-performance, multi-component, nonsag, elastomeric sealant. ASTM C 920 compliance:

1. Type and Grade: M (mulit component) and NS (nonsag).
2. Class: 100/50 for vertical joints.
3. Use Related to Exposure: NT (nontraffic).
4. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
5. Acceptable Product: Sonolastic 150 by BASF Building Systems or equivalent.

B. Accessories:

1. Cleaner: Substrate cleaner compatible with Manufacturer’s .

2.3 COLOR

A. Sealant Colors: Selected by Owner from Manufacturer's full color range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect areas involved in Work to establish extent of Work, access, and need for protection of surrounding construction.

B. Examine joints for defects that would adversely affect quality of installation.

C. Provide additional joint preparation, beyond that outlined in Specifications, as required by sealant Manufacturer.

3.2 PREPARATION

A. Remove loose materials and foreign matter that impair adhesion of joint sealant.

B. Clean joints as required to expose sound surface free of contamination and laitance.

C. Ensure structurally sound surfaces, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials, and other foreign matter.

D. Concrete, Stone, and Other Masonry:

1. Clean by wire brushing to expose sound surface free of contamination and laitance.
2. Prime masonry.

E. Wood:

1. Do not apply over freshly treated wood; treated wood must have weathered for at least 6 months.
2. Clean new and weathered wood. Scrape away loose paint to bare wood. If coatings cannot be removed, test coatings to verify adhesion of sealant or determine appropriate.

F. Metal:

1. Remove scale, rust, and coatings from metal to expose bright white surface. Remove protective coatings as well as chemical residue or film.

2. Aluminum Frames: Remove clear lacquer before application of joint sealants. If coatings cannot be removed, test coatings to verify adhesion of sealant or determine an appropriate primer.

G. EIFS

1. Base coat must be sound, well bonded, properly cured and of sufficient depth to comply with manufacturer's specifications.

2. Prime substrate.

3. Apply sealant to the EIFS system base coat.

3.3 MIXING

A. Transfer entire contents of Part B to Part A container using spatula or margin trowel.

B. Thoroughly mix Part B with Part A. Scrape side of container to ensure complete mixing of Parts A and B. With slow-speed drill and sealant mixing paddle, mix 4 to 6 minutes. Keep paddle blade below surface of sealant to avoid whipping air into sealant.

C. Transfer entire contents of 1 pigment can, if required, into mixed Part A and B. Use spatula or knife to remove pigment from container. Continue mixing with slow-speed drill and slotted paddle until color is uniform. During process, scrape sides and bottom of mixing container several times to obtain complete mix.

D. Pot life of mixed tint base is influenced by temperature and humidity. Approximate pot life is 1 to 2 hours at 70 degrees F (21 degrees C) and 50 percent relative humidity.

3.4 PRIMING

A. Where circumstances or substrates require primer, comply with the following requirements:

1. Apply primer full strength with brush or clean, lint-free cloth. Apply primer to a light, uniform coating. Porous surfaces require more primer. Do not over apply, or allow primer onto face of substrate.

2. Allow primer to dry before applying joint sealants. Depending on temperature and humidity, primer will be tack free in 15 to 120 minutes.

3. Prime and seal on same workday.

3.5 INSTALLATION

A. Sealant:

1. Verify that temperature and moisture conditions are within Manufacturer's acceptable limits.

2. Using fresh sealant and equipment that is in proper working order, apply sealant to fillet joint, avoiding entrapping air.

3. Using clean, dry tool with rounded edge, and of appropriate width for fillet joint, tool freshly installed sealant to provide preferred concave profile, to ensure intimate contact between sealant and substrate, and to provide neat appearance. Where surface aggregate does not permit proper tooling, install sealant and backer rod so that face of joint is recessed behind exposed aggregate, and sealant is bonded to firm, even surface.

4. Use dry tooling method. Do not use tooling agents such as soapy water or solvents that have not been approved by sealant manufacturer.

3.6 CURING TIME

A. Curing of joint sealants varies with temperature and humidity. The following times assume 75 degrees F (24 degrees C), 50 percent relative humidity, and joints 1/2 inch (13 mm) wide by 1/4 inch (6 mm).

1. Skins: Within 2 hours.

2. Functional: Within 3 days.

3. Full Cure: Approximately 1 week.

3.7 INSPECTION

A. During execution of Work, inspect Work to assure compliance with Manufacturer's guidelines, these Specifications when they exceed manufacturer's guidelines, and good construction practice.

1. Refer to latest revision of ASTM C1521 for test methods and frequency.

2. Allow inspections of Work and assist in testing requested by manufacturer's representative and Engineer.

B. Non-Compliant Work: If inspections reveal non-compliant Work or Work that was not installed per Specifications, and/or Manufacturer requirements, remove adjacent Work until a location is reached where installation was performed properly. Assist in spot-checking remainder of Work.

3.8 CLEANING

A. Remove uncured sealant and joint filler with xylene, toluene, MEK, or other sealant manufacturer approved solvent.

B. Remove cured sealant by cutting with sharp-edged tool.

C. Remove thin films by abrading.

D. Remove debris related to application of sealants from Project site per applicable regulations for hazardous waste disposal.

3.9 PROTECTION

A. Protect Work from contaminating substances and damage resulting from other construction operations or other causes so that sealed joints are without deterioration or damage at time of Project completion.

END OF SECTION

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies steel doors, steel frames and related components.
B. Terms relating to steel doors and frames as defined in ANSI A123.1 and as specified.

1.2 RELATED WORK

A. Door Hardware: Section 08 71 00, DOOR HARDWARE.

1.3 TESTING

A. An independent testing laboratory shall perform testing.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
B. Manufacturers Literature and Data: Fire rated doors and frames, showing conformance with NFPA 80 and Underwriters Laboratory, Inc., or Intertek Testing Services or Factory Mutual fire rating requirements.

1.5 SHIPMENT

A. Prior to shipment label each door and frame to show location, size, door swing and other pertinent information.
B. Fasten temporary steel spreaders across the bottom of each door frame.

1.6 STORAGE AND HANDLING

A. Store doors and frames at the site under cover.
B. Protect from rust and damage during storage and erection until completion.

1.7 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
B. Federal Specifications (Fed. Spec.):
L-S-125B Screening, Insect, Nonmetallic
C. Door and Hardware Institute (DHI):
A115 Series Steel Door and Frame Preparation for Hardware, Series A115.1 through A115.17 (Dates Vary)
D. Steel Door Institute (SDI):
113-01 Thermal Transmittance of Steel Door and Frame Assemblies
128-1997 Acoustical Performance for Steel Door and Frame Assemblies
A250.8-03 Standard Steel Doors and Frames

E. American Society for Testing and Materials (ASTM):

A568/568-M-07 Steel, Sheet, Carbon, and High-Strength, Low-alloy, Hot-Rolled and Cold-Rolled

A1008-08 Steel, sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy and High Strength Low Alloy with Improved Formability

E90-04 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

F. The National Association Architectural Metal Manufactures (NAAMM):

Metal Finishes Manual (1988 Edition)

G. National Fire Protection Association (NFPA):

80-09 Fire Doors and Fire Windows

H. Underwriters Laboratories, Inc. (UL):

Fire Resistance Directory

I. Intertek Testing Services (ITS):

Certifications Listings…Latest Edition

J. Factory Mutual System (FM): Approval Guide

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sheet Steel: ASTM A1008, cold-rolled for panels (face sheets) of doors.

B. Anchors, Fastenings and Accessories: Fastenings anchors, clips connecting members and sleeves from zinc coated steel.

C. Prime Paint: Paint that meets or exceeds the requirements of A250.8.

2.2 FABRICATION GENERAL

A. GENERAL:

1. Follow SDI A250.8 for fabrication of standard steel doors, except as specified otherwise. Doors to receive hardware specified in Section 08 71 00, DOOR HARDWARE. Tolerances as per SDI A250.8. Thickness, 44 mm (1-3/4 inches), unless otherwise shown.
2. Close top edge of exterior doors flush and seal to prevent water intrusion.
3. When vertical steel stiffeners are used for core construction, fill spaces between stiffeners with mineral fiber insulation.

B. Extra Heavy Duty Doors: SDI A250.8, Level 3, Model 2 of size and design for the roof access on the Marine Science Building. Types b or c for exterior.

1. Provide doors approved by Miami/Dade County for use at exterior doors.

2.3 METAL FRAMES

A. General:

1. SDI A250.8, 0.053 inch thick sheet steel, types and styles as shown or scheduled.
2. Frames for exterior doors: Fabricate from 0.0785 inch thick galvanized steel conforming to ASTM A525.

a. Provide frames approved by Miami/Dade County for use in hurricane-resistant openings where indicated.

3. Frames for labeled fire rated doors and windows.
   a. Comply with NFPA 80. Test by Underwriters Laboratories, Inc., Inchcape Testing Services, or Factory Mutual.
   b. Fire rated labels of approving laboratory permanently attached to frames as evidence of conformance with these requirements. Provide labels of metal or engraved stamp, with raised or incised markings.
4. Frames for doors specified to have automatic door operators; Security doors (Type 36): minimum 0.067 inch thick.
5. Knocked-down frames are not acceptable.

B. Reinforcement and Covers:
   1. SDI A250.8 for, minimum thickness of steel reinforcement welded to back of frames.

C. Glazed Openings:
   1. Integral stop on exterior, corridor, or secure side of door.

D. Frame Anchors:
   1. Floor anchors:
      a. At bottom of jamb use 0.053 inch thick steel clip angles welded to jamb and drilled to receive two 1/4 inch floor bolts. Use 2 inch by 2 inch by 3/8 inch.
      b. Where mullions occur, provide 2.3 mm (0.093 inch) thick steel channel anchors, drilled for two 6 mm (1/4 inch) floor bolts and frame anchor screws.
      c. Where sill sections occur, provide continuous 1 mm (0.042 inch) thick steel rough bucks drilled for 6 mm (1/4 inch) floor bolts and frame anchor screws. Space floor bolts at 50 mm (24 inches) on center.
   2. Jamb anchors:
      a. Locate anchors on jambs near top and bottom of each frame, and at intermediate points not over 600 mm (24 inches) apart, except for fire rated frames space anchors as required by labeling authority.
      b. Form jamb anchors of not less than 1 mm (0.042 inch) thick steel unless otherwise specified.
      c. Anchors set in masonry: Use adjustable anchors designed for friction fit against the frame and for extension into the masonry not less than 250 mm (10 inches). Use one of following type: 1) Wire loop type of 5 mm (3/16 inch) diameter wire. 2) T-shape or strap and stirrup type of corrugated or perforated sheet steel.
      d. Anchors for stud partitions: Either weld to frame or use lock-in snap-in type. Provide tabs for securing anchor to the sides of the studs.
      e. Anchors for frames set in prepared openings:
         1) Steel pipe spacers with 6 mm (1/4 inch) inside diameter welded to plate reinforcing at jamb stops or hat shaped formed strap spacers, 50 mm (2 inches) wide, welded to jamb near stop.
         2) Drill jamb stop and strap spacers for 6 mm (1/4 inch) flat head bolts to pass thru frame and spacers.

3) Two piece frames: Subframe or rough buck drilled for 6 mm (1/4 inch) bolts.

f. Anchors for observation windows and other continuous frames set in stud partitions.

1) In addition to jamb anchors, weld clip anchors to sills and heads of continuous frames over 1200 mm (4 feet) long.

2) Anchors spaced 600 mm (24 inches) on centers maximum.

g. Modify frame anchors to fit special frame and wall construction and provide special anchors where shown or required.

2.4 LOUVERS

A. General:

1. Sight proof type with stationary blades the full thickness of the door.
2. Provide insect screen and wire guards at exterior doors.

B. Fabrication:

1. Steel louvers 1.3 mm (0.053 inch) inch thick for exterior doors.
2. Fabricate louvers as complete units. Install in prepared cutouts in doors.
3. Weld stationary blades to frames. Weld louvers into door openings.

2.5 SHOP PAINTING

A. SDI A250.8.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Plumb, align and brace frames securely until permanent anchors are set.

1. Use triangular bracing near each corner on both sides of frames with temporary wood spreaders at midpoint.
2. Use wood spreaders at bottom of frame if the shipping spreader is removed.
3. Protect frame from accidental abuse.
4. Where construction will permit concealment, leave the shipping spreaders in place after installation, otherwise remove the spreaders after the frames are set and anchored.
5. Remove wood spreaders and braces only after the walls are built and jamb anchors are secured.

B. Floor Anchors:

1. Anchor the bottom of door frames to floor with two 6 mm (1/4 inch) diameter expansion bolts.
2. Power actuated drive pins may be used to secure frame anchors to concrete floors.

C. Jamb Anchors:

1. Anchors in masonry walls: Embed anchors in mortar. Fill space between frame and masonry wall with grout or mortar as walls are built.
2. Coat frame back with a bituminous coating prior to lining of grout filling in masonry walls.
3. Secure anchors to sides of studs with two fasteners through anchor tabs. Use steel drill screws to steel studs.

4. Frames set in prepared openings of masonry or concrete: Expansion bolt to wall with 6 mm (1/4 inch) expansion bolts through spacers. Where subframes or rough bucks are used, 6 mm (1/4 inch) expansion bolts on 600 mm (24 inch) centers or power activated drive pins 600 mm (24 inches) on centers. Secure two piece frames to subframe or rough buck with machine screws on both faces.

D. Install anchors for labeled fire rated doors to provide rating as required.

3.2 INSTALLATION OF DOORS AND APPLICATION OF HARDWARE

A. Install hardware as specified in Section 08 71 00, DOOR HARDWARE.

End of Section 08 11 13

SECTION 08 71 00
DOOR HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Door hardware and related items necessary for complete installation and operation of the roof access door on the Marine Science Building.

1.2 RELATED WORK

A. Application of Hardware:
Section 08 11 13, HOLLOW METAL DOORS AND FRAMES

1.3 GENERAL

A. Provide rated door hardware assemblies where required by the 2006 International Building Code (IBC) with South Carolina amendments and adoptions.

C. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.

D. Hardware for application on metal doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.

E. The following items shall be of the same manufacturer, if possible, except as otherwise specified:

F. Mortise Locksets:

1. Hinges for hollow metal doors.
2. Surface applied overhead door closers.
3. Exit devices.

1.4 WARRANTY

A. Warranty the following elements as indicated below:

1. Locks, latchsets, and panic hardware: 5 years.
2. Door closers and continuous hinges: 10 years.

1.5 MAINTENANCE MANUALS

A. In accordance with Section 01 00 00, GENERAL REQUIREMENTS Article titled "INSTRUCTIONS" furnish maintenance manuals and instructions on all door hardware.

1.6 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit copies of the schedule per Section 01 33 23.

B. Hardware Schedule: Prepare and submit hardware schedule in the following form:

1. Samples and Manufacturers' Literature:

A. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.

B. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

1.7 DELIVERY AND MARKING

A. Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to Resident Engineer for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in Resident Engineer's office until all other similar items have been installed in project, at which time the Resident Engineer will deliver items on file to Contractor for installation in predetermined locations on the project.

1.8 PREINSTALLATION MEETING

A. Attend the preinstallation meeting as part of this project. Other attendees will be those parties directly affecting work of this section, including Contractor and Installer, Engineer, and Owner’s Representative.

1.9 INSTRUCTIONS

A. Manufacturers' Catalog Number References: Where manufacturers' products are specified herein, products of other manufacturers which are considered equivalent to those specified may be used. Manufacturers whose products are specified are identified by abbreviations as follows:

MANUFACTURER'S ABBREVIATIONS:

1. MK – McKinney
2. RO – Rockwood
3. SA – Sargent
4. HS – HES
5. RF – Rixson
6. NO – Norton
7. PE – Pemko

C. Keying: All cylinders shall be keyed into existing campus Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7 pin type. Keying information shall be furnished at a later date by the Owner's Representative.

1.10 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.

B. American Society for Testing and Materials (ASTM):

F883-04Padlocks

C. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):

A156.13-05 Mortise Locks and Latches Series 1000
A156.16-08 Auxiliary Hardware
A156.17-04 Self-Closing Hinges and Pivots
A156.18-06 Materials and Finishes
A156.20-06 Strap and Tee Hinges, and Hasps
A156.21-09 Thresholds
A156.22-05 Door Gasketing and Edge Seal Systems
A156.26-06 Continuous Hinges
A156.28-07 Master Keying Systems
A156.30-03 High Security Cylinders
A250.8-03 Standard Steel Doors and Frames

A156.1-06 Butts and Hinges

A156.2-03 Bored and Pre-assembled Locks and Latches

A156.3-08 Exit Devices, Coordinators, and Auto Flush Bolts

A156.5-01 Auxiliary Locks and Associated Products

A156.6-05 Architectural Door Trim

A156.8-05 Door Controls-Overhead Stops and Holders

D. National Fire Protection Association (NFPA):

80-10.....Fire Doors and Fire Windows

101-09.....Life Safety Code

E. Underwriters Laboratories, Inc. (UL): Building Materials Directory (2008)

PART 2 - PRODUCTS

2.1 CONTINUOUS HINGES

A. ANSI/BHMA A156.26, Grade 1-600.

1. Listed under Category N in BHMA's "Certified Product Directory."

B. General: Minimum 0.120 inch thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

2.2 DOOR STOPS

A. Conform to ANSI A156.16.

B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.

C. Provide stop Type L02011, as applicable for exterior doors. At outswing doors where stop can be installed in concrete, provide stop mated to concrete anchor set in 76 mm (3 inch) core-drilled hole and filled with quick-setting cement.

2.3 OVERHEAD DOOR STOPS AND HOLDERS

A. Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold-open on/off control at all other doors requiring overhead door stops.

2.4 LOCKS AND LATCHES

A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Lock cylinders shall have not less than seven pins. Cylinders for all locksets shall be removable core type. Cylinders

shall be furnished with construction removable cores and construction master keys. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 19 mm (3/4 inch) throw, unless shorter throw allowed by the door manufacturer's fire label. Provide temporary keying device or construction core of allow opening and closing during construction and prior to the installation of final cores.

B. In addition to above requirements, locks and latches shall comply with following requirements:
   1. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13. Mortise locksets shall be series 1000, minimum Grade 2. All locksets and latchsets shall have lever handles fabricated from cast stainless steel. Provide lever design matching Sargent LNL. All locks and latchsets shall be furnished with 4-7/8 inch curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 7/8 inch lip-to-center dimension. Lock function F02 shall be furnished with emergency tools/keys for emergency entrance. Furnish armored fronts for all mortise locks. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide nonferrous mortise lock case.
   2. The lock housing shall not project more than 4 inches from the underside of the frame head stop.

2.5 KEYS

A. Stamp all keys with change number and key set symbol. Furnish keys in quantities as follows:

2.6 ARMOR PLATES

A. Conform to ANSI Standard A156.6.

B. Provide protective plates as specified below:
   1. Kick plates and armor plates of metal, Type J100 series.
   2. Provide kick plates where specified. Kick plates shall be 10 inches high. Kick plates shall be minimum 0.050 inches thick. Provide kick plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 1-1/2 inches less than width of door. Extend all other kick plates to within 1/4 inch of each edge of doors. Kick plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.

3. Kick plates are not required on following door sides:
   a. Armor plate side of doors;
   b. Exterior side of exterior doors.

2.7 THRESHOLDS

A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. In existing construction, thresholds shall be installed in a bed of sealant with 1/4-20 stainless steel machine screws and expansion shields. In new construction, embed aluminum anchors coated with epoxy in concrete to secure thresholds. Furnish thresholds for the full width of the openings.

B. At exterior doors, provide threshold with non-slip abrasive finish.

D. Provide with miter returns where threshold extends more than 0.5 inch from frame face.

2.8 WEATHERSTRIPS (FOR EXTERIOR DOORS)

A. Conform to ANSI A156.22. Air leakage shall not to exceed 0.50 CFM per foot of crack length.

2.9 FINISHES

A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, coordinate color with Owner’s representative.

B. Miscellaneous Finishes:
   1. Hinges: exterior doors: same as door.
   2. Thresholds: Mill finish aluminum.
   3. Other primed steel hardware: same as door.

PART 3 - EXECUTION

3.1 HARDWARE HEIGHTS

A. Locate hardware on doors at heights specified below, with all hand-operated hardware centered, unless otherwise noted:

B. Hardware Heights from Finished Floor:
   1. Locksets and latch sets centerline of strike 40-5/16 inches.
   2. Deadlocks centerline of strike.
   3. Locate other hardware at proportional heights.

3.2 INSTALLATION

A. Hinge Size Requirements:

B. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim and surrounding conditions.

C. Hinges Required Per Door: continuous hinge.

D. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.

3.3 FINAL INSPECTION

A. After locks have been installed; show in presence of Owner's representative that keys operate their respective locks in accordance with keying requirements. (All keys, Master Key level and above shall be provided by hand to the Owner's representative.

3.5 HARDWARE SETS

Description: Exterior Roof Doors

1	Continuous Hinge (McKinney)		MCK-14HD 83"	CL	MK
1	Mortise Lock (double locking)(Sargent)		SG 72 73-7P 8259 LNL	US32D	SA
1	Door Closer (surface w/stop & holder) (Sargent)		351 PSH	EN	SA
1	Kick Plate (Rockwood)		K1050 10" 4BE CSK	US32D-MS	RO
1	Threshold (Pemko)	171A			PE
1	Gasketing (Pemko)	294AV			PE
1	Rain Guard (Pemko)	346C			PE

End of Section 08 71 00

SECTION 09 96 53
ELASTOMERIC COATING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

Application of water-based, VOC-compliant, silicone-modified, elastomeric decorative coating for waterproofing exterior, above-grade vertical and sloped surfaces.

1.2 RELATED SECTIONS:

Section 072400 – Exterior Insulation Finish System.

1.3 REFERENCES:

A. Federal Specification TT-C-555B, Type II

B. ASTM D522

C. ASTM D2370

D. ASTM D2805

E. ASTM D3719

F. ASTM G155

1.4 SUBMITTALS

A. Comply with Section 013300.

B. Product Data: Submit manufacturer's technical data sheets and MSDS sheets.

C. Submit list of project references as documented in this Specification under Quality Assurance Article. Include contact name and phone number of person charged with oversight of each project.

1.5 QUALITY ASSURANCE

A. Comply with Section 014000.

B. Qualifications:

1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products.
2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.
3. Applicator Qualifications: Company with minimum of 5 years of experience in application of specified products on projects of similar size and scope, and is acceptable to product Manufacturer.

a. Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

C. Field Sample:

1. Install at Project site or pre-selected area of building an area for field sample, minimum 1 foot by 4 feet, using specified material.
2. Apply material in accordance with Manufacturer's written application instructions.
3. Manufacturer's representative or designated representative will review technical aspects; surface preparation, repair, and workmanship.
4. Field sample will be standard for judging workmanship on remainder of Project.
5. Maintain field sample during construction for workmanship comparison.
6. Do not alter, move, or destroy field sample until Work is completed and approved by Owner's representative or Engineer.
7. Obtain Owner's written approval of field sample before start of material application, including approval of aesthetics, color, texture, and appearance.

1.6 PREINSTALLATION MEETING

A. General: A pre-installation meeting shall be held prior to the start of elastomeric coating or any other work on the Beaufort Campus.

B. Timing: The meeting shall take place before or at the start of the construction.

C. Attendees: Meeting to be called for by the Contractor. Meeting's mandatory attendees shall include the Contractor, Owner's representative, Engineer's representative, and the General Contractor's representative.

D. Topics: Contractor shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 016000.

B. Comply with Manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Deliver and store materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures.

E. Do not store below 35 degrees F (2 degrees C).

1.8 WEATHER CONDITIONS

A. Ensure that substrate surface and ambient air temperature are minimum of 40 degrees F (4 degrees C) and rising at application time and remain above 40 degrees F (4 degrees C)

for at least 12 hours after application. Ensure that frost or frozen surfaces are thawed and dry.

B. Do not apply material if snow, rain, fog, and mist are anticipated within 12 hours after application. Allow surfaces to attain temperature and conditions specified before proceeding with coating application.

C. Do not apply over sealant joints.

D. Do not apply to traffic-bearing surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from one of the following manufacturers:

1. BASF Construction Chemicals; 889 Valley Park Drive; Shakopee, MN 55379; Tel: 800-433-9517.
2. Sto; 3800 Camp Creek Parkway, SW, Bldg 1400, Suite 120; Atlanta, GA 30331; Tel: 800-221-2397
3. Advanced Coating Systems, Inc.; 2230 Towne Lake Parkway, Bldg. 1000/140; Woodstock, GA 30189; Tel: 800-587-3758.

B. Substitutions: Comply with Section 016000.

C. Specifications and Drawings are based on manufacturer's proprietary literature from BASF Construction Chemicals. Other Manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in Specifications or on Drawings. Engineer will be sole judge of appropriateness of substitutions.

2.2 MATERIALS

A. Water-based, silicone-modified, anti-carbonation, elastomeric waterproof coating.

1. Acceptable Product: Silflex by BASF Construction Chemicals.

B. Performance Requirements: Provide coating complying with the following requirements:

1. Compliance: Federal Specification TT-C-555B, Type II.
2. Weight, pastel base: 10.6 lbs per gal (1.3 kg/L).
3. Solids Content:
   a. By Weight: 55.1 percent.
   b. By Volume: 45.7 percent.
4. Viscosity: 131 KU.
5. Elongation at Break, ASTM D2370: 784.5 percent.
6. Tensile Strength, ASTM D2370: 40 psi (0.28 MPa).
7. Wind-Driven Rain, Federal Specification TT-C-555B, 98 mph: Passes.
8. Artificial Weathering, ASTM G155, Xenon Arc, 4,000 hours: No chalking, checking, cracking, or adhesion loss. Color change, ΔE: Less than 2.6.

9. CO_2 Diffusion Resistance, Engelfried, at 10 dry mils: 323,000, 8-inch (203-mm) equivalent concrete layer.
10. Water Vapor Transmission, ASTM D1653 and E96:
    a. Wet: 13 perms.
    b. Dry: 1.62 perms.
11. Dirt Pick-Up, ASTM D3719, at 2 months: 92.91.
12. Hiding, ASTM D2805, at 6 wet mils (0.15 mm): 99.8 percent opacity.
13. Low-Temperature Flexibility, ASTM D522: Passes.
    a. 1/8-inch (3.2-mm) mandrel at minus 30 degrees F (minus 34 degrees C).
14. VOC Content:
    a. Maximum 0.7 lbs per gal (84.0 g/L), less water and exempt solvents.

C. Approximate Coverage Rates:

1. Substrates, square feet per gallon (m^2/L), per coat:
    a. Troweled Stucco: 60 to 80 (1.5 to 2.0).
    b. Blown on Stucco: 50 to 70 (1.2 to 1.7).
    c. CMU: 50 to 70 (1.2 to 1.7).
    d. Brick: 60 to 80 (1.5 to 2.0).
    e. Concrete: 80 to 100 (2.0 to 2.5).
2. Average Wet Film Thickness: 16 to 33 mils (0.41 to 0.83 mm).
3. Average Dry Film Thickness: 7 to 15 mils (0.18 to 0.38 mm).

D. Colors: Selected by Owner from Manufacturer's full color range.

E. Texture: Smooth.

F. Acrylic, exterior paint for bottom of band.

1. 100% acrylic exterior flat latex paint, resistant to wind-driven rain.
    a. Mildew-resistant
    b. High build
    c. Vapor permeable
2. Match color with elastomeric coating with Owner approval.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Comply with Section 017000.

3.2 SURFACE PREPARATION

A. Protection: Protect adjacent Work areas and finish surfaces from damage during coating application.

B. Prepare top and bottom surfaces of EIFS band and the front of the band in accordance with Manufacturer's instructions. Do not apply coating to the bottom of the band. Paint the bottom with an acrylic, exterior paint with color to match.

C. Ensure that substrate is sound, clean, dry, and free of dust, dirt, oils, grease, laitance, efflorescence, mildew, fungus, biological residues, and other contaminants that could prevent proper adhesion.

D. Clean surface of EIFS band to achieve texture similar to medium-grit sandpaper.

E. Remove protruding elements and smooth out irregularities.

F. When chemical cleaners are used, neutralize compounds and fully rinse surface with clean water. Allow surface to dry before proceeding.

G. Remove blisters or delaminated areas and sand edges to smooth rough areas and provide transition to existing paint areas.

H. Treat cracks greater than 1/32 inch (0.8 mm) with knife-grade or brush-grade patching compound.

I. Treat cracks greater than 1/4 inch (6 mm) as expansion joints and fill with sealant approved by coating manufacturer.

3.3 PRIMING

A. Prime uncoated EIFS substrates, except those treated with block filler, in accordance with Manufacturer's instructions.

3.4 APPLICATION

A. Apply coating in accordance with Manufacturer's instructions.

B. Apply coating in pinhole-free, continuous membrane for waterproofing integrity.

3.5 PROTECTION

A. Protect applied coating from damage during construction.

END OF SECTION