

PROJECT MANUAL

For

USCA PICKENS SALLEY HOUSE RENOVATION

Aiken, South Carolina

OSE # H29-I336

Bid Documents

October 24, 2011



mcmillan|pazdan|smith
architecture
greenville south carolina

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USCA Pickens Salley House Renovation
University of South Carolina Aiken
Aiken, South Carolina
OSE No. H29-I336

Project No. 10293.00
October 24, 2011
mcmillan | pazdan | smith

Professional Seals

1 Architect Seals

REQUEST FOR ADVERTISEMENT**PROJECT NAME:** USCA Pickens Salley House Renovation**PROJECT NUMBER:** H29-I336**PROJECT LOCATION:** Aiken, 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:** \$200,000 - \$250,000**DESCRIPTION OF PROJECT:** Exterior Improvements and Renovations to the Pickens Salley House on the campus of USC Aiken**A/E NAME:** McMillan Pazdan Smith Architecture**A/E CONTACT:** Gable D. Stubbs, AIA**A/E ADDRESS:** Street/PO Box: 200 E. Broad Street, Ste. 300City: GreenvilleState: SC ZIP: 29601-**EMAIL:** gstubbs@mcmillanpazdansmith.com**TELEPHONE:** 864-242-2033**FAX:** 864-242-2034All questions & correspondence concerning this Invitation shall be addressed to the A/E.**BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM:** McMillan Pazdan Smith Architecture**PLAN DEPOSIT AMOUNT:** \$50.00 **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):*AGC - Columbia_____
_____**PRE-BID CONFERENCE?** Yes No **MANDATORY ATTENDANCE?** Yes No **DATE:** 01/24/12 **TIME:** 10:00 am **PLACE:** Pickens Salley House Conference Room**AGENCY:** University of South Carolina**NAME OF AGENCY PROCUREMENT OFFICER:** Michelle Adams**ADDRESS:** Street/PO Box: 743 Green StreetCity: ColumbiaState: SC ZIP: 29208**EMAIL:** mdadams@fmc.sc.edu**TELEPHONE:** (803) 777-0981**FAX:** (803) 777-7334**BID CLOSING DATE:** 2/6/12 **TIME:** 2 pm **LOCATION:** Pickens Salley House Conference Room**BID DELIVERY ADDRESSES:****HAND-DELIVERY:**Attn: Lisa GroftUniversity of South Carolina Aiken471 University ParkwayAiken, SC 29801**MAIL SERVICE:**Attn: Lisa GroftUniversity of South Carolina Aiken471 University ParkwayAiken, SC 29801**IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION?** *(Agency MUST check one)* Yes No **APPROVED BY** *(Office of State Engineer):* _____**DATE:** _____



AIA[®] Document A701[™] – 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address):

THE OWNER:

(Name and address):

THE ARCHITECT:

(Name and address):

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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.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

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

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

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

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

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

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

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

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

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

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

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

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

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

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

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

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

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

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

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

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

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

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

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

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

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

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

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

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

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

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

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

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

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

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

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

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

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

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

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

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

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

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

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

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

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

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

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

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

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

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

§ 5.2 REJECTION OF BIDS

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

§ 5.3 ACCEPTANCE OF BID (AWARD)

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

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

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

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

§ 6.2 OWNER'S FINANCIAL CAPABILITY

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

§ 6.3 SUBMITTALS

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

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

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

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

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

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

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

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

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

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

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

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

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

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

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

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

Additions and Deletions Report for AIA[®] Document A701[™] – 1997

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 13:37:31 on 08/13/2007.

There are no differences.

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, _____, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 13:37:31 on 08/13/2007 under Order No. 1000263307_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 1997 - Instructions to Bidders, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

OWNER: University of South Carolina Aiken**PROJECT NUMBER:** H29-I336**PROJECT NAME:** USCA Pickens Salley House Renovation**PROJECT LOCATION:** Aiken, South Carolina**PROCUREMENT OFFICER:** Michelle Adams**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.

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

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

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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

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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.

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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 may 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.

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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.

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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-Authority 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.”*

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****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

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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: Lobby

Building Where Posted: Facilities Admin Building

Address of Building: 743 Green Street, Columbia, SC

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

Posting date will be announced at bid opening. In addition to posting the notice, the Owner will promptly send all responsive bidders a copy of the notice of intent to award and the final bid tabulation

9.5 PROTEST OF SOLICITATION OR AWARD

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

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

(a) by email to protest-ose@mmo.sc.gov,

(b) by facsimile at 803-737-0639, or

(c) by post or delivery to 1201 Main Street, Suite 600, Columbia, SC 29201.

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

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.

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STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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

END OF DOCUMENT



AIA[®] Document A310[™] – 1970

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we
(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and
(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of _____ as Surety, hereinafter called
the Surety, are held and firmly bound unto
(Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called the Obligee, in the sum of (\$ _____), for the payment of
which sum well and truly to be made, the said Principal and the said Surety, bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and
severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for
(Here insert full name, address and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the
Principal shall enter into a Contract with the Obligee in accordance with the terms of
such bid, and give such bond or bonds as may be specified in the bidding or Contract
Documents with good and sufficient surety for the faithful performance of such Contract
and for the prompt payment of labor and material furnished in the prosecution thereof, or
in the event of the failure of the Principal to enter such Contract and give such bond or
bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty
hereof between the amount specified in said bid and such larger amount for which the
Obligee 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.

Signed and sealed this _____ day of _____,

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.

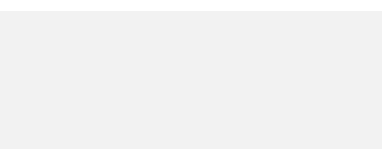
This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.



(Witness)



(Witness)



(Principal)

(Seal)

(Title)

(Surety)

(Title)

(Seal)

**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: _____
(Owner's Name)

FOR PROJECT: PROJECT NAME USCA Pickens Salley House Renovation
PROJECT NUMBER H29-I336

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):* Exterior improvements and renovations to the Pickens Salley House on the campus of USC Aiken.

_____, 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): _____

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

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

ALTERNATE # 2 (Brief Description): _____

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

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

ALTERNATE # 3 (Brief Description): _____

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

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

SE-330 – LUMP SUM BID

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-3A)

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
Painting		
Masonry		
ALTERNATE 1		
ALTERNATE 2		
ALTERNATE 3		

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

**SE-330 – LUMP SUM BID
BID FORM****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 \$125.00 for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This 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**

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: _____

ADDRESS: _____

BY: _____
(Signature)

DATE: _____

TITLE: _____

TELEPHONE: _____

EMAIL: _____



AIA[®] Document A101[™] – 2007

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

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

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

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

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

| A

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

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

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

Init.

User Notes:

(2054829143)

TABLE OF ARTICLES

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

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

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

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Init.

Portion of Work

Substantial Completion Date

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

ARTICLE 4 CONTRACT SUM

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

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

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

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

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

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

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

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

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

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

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported

by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

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

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of percent (%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of percent (%);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

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

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

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

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

§ 5.2 FINAL PAYMENT

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

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

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

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

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2007
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

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

(Insert rate of interest agreed upon, if any.)

%

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

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

Init.

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

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

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

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

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

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
---------	-------	------	-------

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date
--------	-------	------

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
--------	------	-------

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

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

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

Init.

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

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond

Limit of liability or bond amount (\$0.00)

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

OWNER *(Signature)*

CONTRACTOR *(Signature)*

(Printed name and title)

(Printed name and title)

Additions and Deletions Report for **AIA[®] Document A101[™] – 2007**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 09:16:46 on 03/29/2010.

PAGE 1

A

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Michael Short, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 09:16:46 on 03/29/2010 under Order No. 2048764075_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ – 2007 - Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

OSE FORM 00501

STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

OWNER: University of South Carolina Aiken

PROJECT NUMBER: H29-I336

PROJECT NAME: USCA Pickens Salley House Renovation

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%).”

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR

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: Tom Opal

Title: Senior Project Manager

Address: 743 Greene Street, Columbia, SC 29208

Telephone: 803-777-7076 **FAX:** 803-777-0484

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: Lekita Hargrave

Title: Project Manager

Address: 743 Greene Street, Columbia, SC 29208

Telephone: 803-777-5818 **FAX:** 803-777-8739

Email: hargrave@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: _____

OSE FORM 00501
STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR

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: Gable D. Stubbs, AIA
Title: Associate
Address: 200 E. Broad Street, Suite 300, Greenville, SC 29601
Telephone: 864-242-2033 **FAX:** 864-242-2034
Email: gstubbs@mcmillanpazdansmith.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

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
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- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
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- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

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.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

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

§ 1.1.2 THE CONTRACT

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

§ 1.1.3 THE WORK

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

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

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

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

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

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

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

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, 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 publication in derogation of the Architect's or Architect's consultants' reserved rights.

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

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

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

ARTICLE 2 OWNER

§ 2.1 GENERAL

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

§ 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 evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

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

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

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

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

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

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect 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 Order 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. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

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

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

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

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

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

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

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

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

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

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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

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

§ 3.5 WARRANTY

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

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

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

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

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

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

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

the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 SUPERINTENDENT

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

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

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

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

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

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

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

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

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

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

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

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

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

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

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

§ 3.13 USE OF SITE

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

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

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

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

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

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

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

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

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

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

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

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

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

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

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§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

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

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, 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 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.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

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

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

the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

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

§ 7.2 CHANGE ORDERS

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

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

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine 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 the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 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;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

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

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

§ 7.4 MINOR CHANGES IN THE WORK

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

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

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

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

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

§ 8.2 PROGRESS AND COMPLETION

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of 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 insurance.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, 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.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, 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 if provided for in the Contract Documents.

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

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

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

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

§ 9.4 CERTIFICATES FOR PAYMENT

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

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

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

§ 9.6 PROGRESS PAYMENTS

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

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

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

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

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

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

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

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, 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 date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, 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 by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

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

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

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. 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.

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

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

§ 9.9 PARTIAL OCCUPANCY OR USE

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

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 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 will promptly make such inspection 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.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (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. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

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

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

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

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

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

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

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

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

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

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), 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.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

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

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

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

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

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, 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.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, 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.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

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

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner 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 without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

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

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

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

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or

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otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

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

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor 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 Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor 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 Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. 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 after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner 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 Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

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

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

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

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

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

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

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

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

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

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

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

§ 13.5 TESTS AND INSPECTIONS

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

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

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

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

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

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

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 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 all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

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

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

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

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with 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.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

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

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

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

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

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

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 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; and
- .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.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party 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.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, 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 prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

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

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

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

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

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker 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 Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 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.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an

additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.



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Additions and Deletions Report for **AIA[®] Document A201[™] – 2007**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 09:20:20 on 03/29/2010.

There are no differences.

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Michael Short, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 09:20:20 on 03/29/2010 under Order No. 2048764075_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2007 - General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

OSE FORM 00811

STANDARD SUPPLEMENTARY CONDITIONS

OWNER: University of South Carolina Aiken

PROJECT NUMBER: H29-I336

PROJECT NAME: USCA Pickens Salley House Renovation

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.

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STANDARD SUPPLEMENTARY CONDITIONS

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.

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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

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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 construction schedule are as follows:
(Check box if applicable to this Contract))

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

3.25 *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 opening words "The Contractors shall."*

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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.

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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

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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;

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- .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:

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- .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.

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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.

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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, delete 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

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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.

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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."

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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)	<u>\$1,000,000</u>
(b) Products/Completed Operations	<u>\$1,000,000</u>
(c) Personal and Advertising Injury	<u>\$1,000,000</u>
(d) Each Occurrence	<u>\$1,000,000</u>
(e) Fire Damage (Any one fire)	<u>\$50,000</u>
(f) Medical Expense (Any one person)	<u>\$5,000</u>

(2) BUSINESS AUTO LIABILITY (including All Owned, Non-owned, and Hired Vehicles):

(a) Combined Single Limit	<u>\$1,000,000</u>
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(3) WORKER'S COMPENSATION:

(a) State Statutory	
(b) Employers Liability	<u>\$100,000</u> Per Acc.
.....	<u>\$500,000</u> Disease, Policy Limit
.....	<u>\$100,000</u> 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

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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.

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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.

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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.

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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 Carolina Code of Laws, as amended, OSE shall determine the enforcement and interpretation of all building codes and referenced standards on state buildings. The Contractor shall refer any questions, comments, or directives from local officials to the Owner and OSE for resolution.

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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

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- .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;

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- .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.

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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 waived as against the Owner. Without limitation, this mutual waiver is applicable to all damages due to either party's termination in accordance with Article 14. 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)

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

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.

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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: _____

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

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

N/A

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

Refer to Section 01 78 39 Project Record Documents of the Project Manual.

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)*

Refer to Section 01 33 00 Submittal Procedures of the Project Manual.

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

Refer to 01 50 00 Temporary Facilities and Controls of the Project Manual.

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

N/A

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

Additional Supplementary Conditions

SE-355
Performance Bond

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

Name: _____
Address: _____

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

Name: _____
Address: _____

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

Name: _____
Address: _____

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: USCA Pickens Salley House Renovation
State Project Number: H29-I336
Brief Description of Awarded Work, as found on the SE-330, Bid Form: Exterior improvements and renovations to the Pickens Salley House on the campus of USC Aiken.

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

Name: McMillan Pazdan Smith Architecture
Address: 200 E. Broad Street, Ste 300
Greenville, SC 29601

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.

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: _____
Address: _____

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: USCA Pickens Salley Houe Renovation
Project Number: H29-I336
Brief Description of Awarded Work, as found on the SE-330, Bid Form: Exterior improvements and renovations to the Pickens Salley Houe on the campus of USC Aiken

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

Name: McMillan Pazdan Smith Architecture, LLC
Address: 200 E. Broad Street, Ste 300
Greenville, SC 29601

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)

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 one year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.
5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 5.2 Pay or arrange for payment of any undisputed amounts.
 - 5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.
6. Amounts owed by the Agency to the Contractor under the Contract shall be used for the performance of the Contract and

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

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

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

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

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

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

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

13. DEFINITIONS

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

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

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

REQUEST FOR SUBSTITUTE FORM

INSTRUCTIONS

Please read the specifications before completing this form.

This form is only applicable to requests for substitutes that are made during the Bidding Phase. Requests for substitute will not be approved after Contract Execution unless approved by the Office of the State Engineer at which time they will be conducted in accordance with the General Requirements Section 01 25 00 Substitution Procedures. Although the form is detailed and the requested information is specific, it is no more than what was requested from manufactures that are listed in the project specifications. However, approval of this form does not necessarily imply approval for future projects. Products, materials, and components not specified or approved but are installed will be removed and replaced with acceptable products, materials, components at the Contractors expense.

Submit this form along with all required supporting product data, specifications and performance criteria when requesting the use of products or services that are not listed in the Specifications. The Architect must receive this Request For Substitute form no later than the time stated in the Bidding Requirements for submitting product substitutions. If no time is stated, then no later than 10 days prior to date of bid opening.

Where the Contract Documents list at least three manufacturers or products, the Architect reserves the option to reject any and all requests for substitute. Where the Contract Documents list only one manufacture or product without "Or equal" or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 products or manufacturers, substitutes may be reviewed and evaluated on an individual base.

Receipt of inquiries or submittals without this completed Request For Substitute form will not extend the deadline. Include only one request for substitution on each form. Verbal requests for a substitute or requests submitted on the incorrect request for substitute form are not acceptable and will not extend the submittal deadline established by the Instructions To Bidders. Incomplete forms; forms with vague or unspecific answers; forms without supporting data to substantiate equal or superior quality/design; forms that do not include requested proof, verification, reports, and substantiating documentation; or forms received after the time established in the Instructions will be disapproved. Disapproval will not extend the submittal deadline.

The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified item even if they are not specifically mentioned in the Contract Documents. Products of manufacturers other than those specified may be acceptable after proper submittal to the Architect and after the Architect's review. However, manufacturers capable of providing specified products

shall not, for the convenience of their normal production methods, vary from the specified product.

Where test data and standards are being submitted as supporting data and for comparison with the specified item, submit certified data provided by an independent testing laboratory. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria. Identify and define all abbreviations and acronyms. All substitutes shall meet all of the minimum performance criteria of the specified product. Submittals not complying with this provision will be considered incomplete, unacceptable, and will be rejected. Where not applicable or NA is entered, state why the item is not applicable. Knowingly and intentionally providing incorrect information is fraud.

Complete the following parts as follows:

PART 1: Complete for all requests for substitutes. Contains general, substitute product, marketing/sales, manufacturer, warranty.

PART 4: Complete only for painting substitutes.

PART 5: Complete only for all roofing substitutes.

PART 1 (All Substitutes)

Project Name

Date:

Specification No.:

Drawing No. Reference:

Name of Specified Item:

Substitute Information

Name of Substitute:

Manufacturer of Substitute:

Name:

Address:

Telephone No.:
Years in Business:

Fax No:

General Information

1. Has the entity submitting this Request For Substitute read and fully understands the applicable specifications and stated provisions. Yes ___ No ____. If no, please explain.

2. Is this request at the request of subcontractor or general contractor? Yes ___ No ___
If yes, please give the name and address of that subcontractor or general contractor.

3. If the entity requesting the substitute will not be the installer, please provide the following information about the intended installer:

Name:

Address:

Telephone No.:

Fax No:

Years in Business: Years installing this product:

Did the manufacturer certify the installer? Yes ___ No ___ If yes, when:

Is the certification still effective? Yes ___ No ___

Did the manufacturer train the installer? Yes ___ No ___ If yes, when:

4. If the entity requesting the substitute is a distributor, list all installers within 50 miles of the project site that you sell to:

5. Who will service the substitute?

6. Why is this substitute being requested? (Competitive pricing or being local are not acceptable answers. Please be specific!)

Substitute Product Information

1. Including installation and operational costs, will the substitute be less expensive than the specified entity? Yes ___ No ___ Same ____. (Don't know or can't be determined are not an acceptable answers)

a. If No or the same, why should the substitute be considered? If more expensive, why is it more expensive? (Please be specific!).

- b. If less expensive, why is it less expensive? (Please be specific)
2. What is the functional and physical difference between the specified item and the substitute? If there are no differences, why should this substitute be approved? (Please be specific!)
3. Other than cost, what are the proven and verifiable benefits or advantages of the substitute item? (Please be specific! Convince us. Don't just reference product data. Being local does not necessarily mean better or more economical. Mention any unique benefits or attributes). If there are none, why should this substitute be approved?
- a. If the substitute is more economical, why is it more economical? Please provide detailed cost comparison including material and labor as to why costs are more economical.
- b. If the substitute is better, why/how is it better? Show side-by-side comparison
- c. What does the substitute do that the specified will not do?
- d. If service for the substitute is better, why/how is it better?
4. Are there any known failures of the substitute? If so, where and when did the failures occur and what was the probable cause of the failures?
- 5 Will the Owner have difficulty getting the substitute serviced or repaired?
- 6 Does the substitute installer meet all of the specified qualifications and requirements? Yes:___ No:___ . If no, please describe the differences.
7. Will the proposed substitution affect dimensions shown on the Drawings? Yes ___ No___ . If yes, please explain.
8. Will the proposed substitution have an adverse affect on other trades, the construction schedule, or specified warranty requirements? Yes ___No___ If yes, please explain.

10. Will maintenance and service parts for the proposed substitution will be readily available locally? Yes ___ No ___ If no, please explain.

11. Will the proposed substitute meet or exceed all aspects of the specifications, including overall performance, appearance, and manufacturer's/installers qualifying criteria stated in the Contract Documents? Yes ___ No ___ If no, please explain.

12 Will the proposed substitute meet all applicable governing codes, regulations, and listed or indicated UL assemblies? Yes ___ No ___ Not Applicable _____. If no, please explain.

13. Does the substitute have any affect on other contractors or trades? Yes ___ No _____. If yes, please explain.

Installer Information

If this request for substitute is being submitted by a manufacturer, general contractor, or distributor, complete the following installer information for each installer that may be selected. If this is for a metal roof installer, omit this section and complete Part 7 of this form.

1. Who will install the substitute Product? Provide

Name

Address

Telephone No.

Contact Person?

2. How long has installer been in business? _____ Years

3. How long has the installer operated under this name? _____ Years

4. Has installer ever operated under a different name? Yes ___ No ___

5. If yes, under what name?

6. If this request for substitute is being submitted by a manufacturer, general contractor, or distributor, how long have you had a business relationship with the installer? ___ years.

7. Will installer purchase the substitute or specified product directly from the manufacturer? Yes _____ No _____. If no, please provide name and address of entity the product will be purchased from?

8. Years experience installing the specified or substitute product/system? _____ years.

9. When required by the contract documents, has the installer been trained, qualified, and approved by the manufacturer prior to the date of Advertisement or Invitation for Bids for this project? Yes _____ No _____. If yes, how was approval obtained?

10. Has the installer ever had a manufacturer's approval or certification revoked because of unsatisfactory performance? Yes ___ No _____. If yes, please explain.

11. Will installer maintain a trained work force, including a non-working supervisor on project site at all time installation is in progress? Yes _____ No _____. If no, please explain why?

12. Will the installer install the entire product/system with own employees? Yes _____ No. ____ If no, please explain.

13. Does the installer presently have the staff and equipment on board to perform the contracted work? Yes _____ No _____. If no, please explain. For the purpose of this Contract, the installer's own employees are considered employees for which the installer contributes directly to and is directly financially responsible for the following employee expenses:

- a. All Federal, State and Local Taxes
- b. Social Security
- c. Insurance
- d. Workers Compensation
- e. Holidays
- f. Vacations
- g. Sick Time
- h. Retirement

14. Has the installer successfully completed a minimum of 5 projects of the size and complexity as required fro this project? Yes _____ No _____.

15. Has the installer completed at least 80% of projects on time and under budget? Yes _____ No _____.

16. Has the installer been refused a bond in the last 5 years? Yes _____ No _____. If no, please submit proof.

17. Does the installer provide a written warranty? If yes, length of material and labor warranty? Material ___ years. Labor warranty? ___years. If no, please explain.

18. How many warranty claims have been filed against the installer within the last 3 years? None _____ Labor _____ Product _____

19. Are there any judgments, claims, or arbitration proceedings or suits pending against the installer? Yes _____ No _____. If yes, please explain.

20. Has the installer ever failed to complete any portion of any assigned or contracted work? Yes ___ No ____ If yes, please explain.

21. Does the installer have verifiable means to provide necessary funds to honor warranty requirements? Yes _____ No _____. Please submit proof.

22. Has the installer ever filed for protection under either Chapter 7 or 11 of the US Bankruptcy Laws within last 5 years under this name or any other name? Yes _____ No _____. If yes, please explain

23. Does the installer have a current and active open line of credit with the product/system/material manufacturer (A distributor is not acceptable). Yes _____ No _____. If no, please explain. If the manufacturer does not sell directly to installers, where will the product/system/material manufacturer be purchased?

Sales/Marketing Information

1. How long has this substitute been on the market? _____ years.

2. Did this substitute replace a previous product? Yes _____ No _____. If yes, why.

3. Is the substitute an improvement of a previous product? Yes _____ No _____. If yes, what is the improvement?

4. What was the annual sales volume of this substitute last year?

5. How much more or less is this than the previous year's volume? More _____ Less _____

6. In sales volume of this product, where does the manufacturer rank compared to other manufacturers of the same product? Top 5 10, 15, 20 of _____ manufacturers.

7. How long has the substitute been marketed locally (within 75 miles) to the project? _____ years. List 3 local installations of comparable type, size, and scope where substitute has been successfully used and has been in place and in use for a minimum of 3 years:

- a.
- b.
- c.

8. If the product has not been installed locally (within 75 miles), why do you think that is so?

9. If substitute has been marketed elsewhere, but not locally to the project, why?

10. Is substitute listed in SWEETS Catalogs? Yes _____ No _____ If no why?

11. Is product listed in AIA Masterspec? Yes___ No___ If no, why?

12. Has this same substitute been marketed under a different name or by a different manufacturer? Yes___ No___ If so, please state details

Manufacturer/Fabricator Information

1. How long has the manufacture been in business? _____ years.

2. How long has the manufacturer been operating under the present name? _____years.

3. Has the manufacturer operated under any other name? Yes___ No___ If so, what name?

4. What other products does the manufacturer produce?

5. Has the manufacture, supplier, or contractor ever failed to complete any portion of any assigned or contracted work? Yes___ No___ If yes, please explain.

6. Does the substitute manufacturer meet all of the specified qualifications and requirements? Yes:___ No:___ . If no, please describe the differences.

7. When specified, will the installers be certified and factory-trained by the manufacturer? Yes ___No___ Not Applicable_____ If no, please explain.

8. Does the manufacturer presently meet all specified qualifying criteria. Yes___No_____. If no, please explain.

9. Does the manufacturer comply with the special warranty provisions, when they are specified. Yes ___No___ Not Applicable_____ If no, please explain.

10. Will the installer meet all specified qualifying criteria. Yes___No_____. If no, please explain.

Warranty Information

1. Does substitute manufacturer provide a warranty? Yes:_____ No:_____.

2. If no, why not?

3. If yes, are the warranty provisions equal to or better than those of the specified product, including the exclusions? Yes:_____ No:_____.

4. What provisions or exclusions does the substitute manufacturer's warranty have that are not in the specified warranty?

5. If the manufacturer's warranty period exceeds the time the manufacturer has been in business or the time the product has been available or marketed, how was the warranty time determined? Please be specific.

6. How many warranty claims have been filed against this product in the last 5 years? If product is less than 5 years old, then how many claims since the product was introduced?
0 ___ 1-5 ___ 6-10 ___ Over 10 ___.

7. Are there outstanding warranty claims against this product now? Yes: ___ No: ___. If yes, what is the longest period? ___ months. What is its disposition?

8. If there has been warranty a claim, what was the basis of the claim?

9. If there was more than one claim, were the claims for the same reason? Yes: ___ No: ___. If yes, what is the reason? If claim is related to a design or manufacturing problem, has the problem been corrected?

10. Does warranty require Owner's signature for proper execution? Yes ___ No _____.
If yes, Can it be revised to exclude Owner's signature? Yes ___ No _____.
If the warranty cannot be revised, will the manufacturer issue a certified letter stating that the Owner's signature does not deprive the Owner of other rights, including, but not limited to, provisions under the Uniform Commercial Code and the Magnusson Moss Act.
Yes ___ No _____.

11. Is the warranty pro-rated? Yes _____ No _____.

12. Are there any judgments, claims, or arbitration proceedings or suits pending against the substitute entity? Yes _____ No _____. If yes, please explain.

Foreign Manufacturer

1. Is the manufacturer of proposed item foreign owned? Yes: _____ No: _____
2. Is proposed item manufactured or assembled outside of the United States? Yes: _____ No: _____. If yes, what percentage? _____ percent.

3. Is proposed item manufactured or assembled from components or materials manufactured or assembled outside of the United States? Yes:_____ No:_____. If Yes, what portion of the components or materials are manufactured or assembled outside the United States? _____ percent
4. Do you certify that the substitute product complies with the "Made In America" provisions stipulated elsewhere in the Contract Documents? Yes_____ No_____

Acknowledgements

1. Will the undersigned will pay for costs resulting in changes to the building design, including architectural and engineering design, detailing, and construction costs caused by incorporating the requested substitution or costs associated with any delays caused by deliveries of the substitute? Yes ___No___. If no, please explain.
2. If it is determined that a substitute does not fully comply with the Contract Documents after the substitute has been accepted or installed, will the undersigned assume responsibility for all applicable costs, including removal and installation of non-conforming products, to provide one of the specified products that does comply with the specifications. Yes ___No___ If no, please explain.
3. Is it understood and agreed to that final and ultimate approval of the substitute shall be determined at final completion of the project. Failure to provide equivalent substitutes in appearance, function, and performance to that specified, may result in the removal of the substitute and the installation of approved product at contractor's expense. Yes_____ No_____. If no, please explain.

Enclosed Attachments:

- 1.
- 2.
- 3.
- 4.

Certification of Performance and Assumption of Liability

As a manufacturer or representative of the proposed substitution, it is presumed that you are the most knowledgeable of the proposed substitution. By signing this request, you certify that all information provided in this request is accurate and true. Additionally, you certify that the product, material, component, or service being submitted as a substitute for that specified meets or exceeds the performance, function, and appearance criteria listed in the specifications and in the manufacturer's published literature, and that all information provided in this Request For Substitute, including other applicable Parts, is true and accurate. The Signee also agrees to assume all liability for the ultimate performance, function, and appearance criteria of the submitted substitute.

Person Making Request:

Name:

Signature:

Company:

Address:

Telephone No.:

No.:

Fax.

Approved substitutes and manufacturers will be released by Addendum as described in the Instructions To Bidders

For Architect's Use

Approved: ____ Approved As Noted: ____

Disapproved: ____ Because

Received Too Late: ____

Incomplete Form: ____

Insufficient/Improper Supporting Data: ____

Does Not Meet Specifications: ____

PART 4 (Complete For Paint Substitutes)

1. Provide the following additional supporting information if this request is for a paint manufacturer.

a. Does the paint manufacturer have products and paint systems listed with the Master Painters Institute at the time of invitation or advertisement for bids for this project?

Yes ____ No ____

b. Can the paint manufacturer provide published complete product performance data sheets for the specified products. These sheets shall be available at the time of invitation or advertisement for bids for this project? Yes ____ No ____ If no, how can performance criteria be compared?

c. Does the paint manufacturer have the production volume capacity to develop, produce and deliver the volume of paint and coatings required for this project within the required lead times to meet delivery dates without delaying the project? Yes ____

No ____

d. Is the paint manufacturer actively engaged in researching and developing its own paint and coating formulations? Yes ___ No ___ If no, why not? How is new technology incorporated?

e. Does the paint manufacturer specialize in manufacturing paint and protective coatings of the type specified for this project? Yes ___ No ___
If no, will the paint manufacturer actually produce the required products? Yes ___
No ___

f. Does the paint manufacturer employ a fully trained and experienced technical staff capable of providing necessary field support to investigate problems regarding surface preparation, application, and performance of supplied paints and coatings? Yes ___ No ___

g. Does technical staff shall have their own diagnostic equipment including dry film thickness gauges and adhesion gauges, etc. Yes ___ No ___

If yes, where is the technical specialist located, list the diagnostic equipment that is readily available and the experience in its use.

Technical Specialist:

Diagnostic Equipment:

If no, how are paint systems checked?

PART 5 (Complete For All Roof Substitutes)

Provide the following additional supporting information for all roofing requests for substitutes. Complete part 5 also for metal roofing.

1. Does the roof manufacturer of the proposed product maintain a Certification/Training Program and a network of Certified and Trained Roofing Contractors?
Yes ___ No ___ If yes, how are roofing contractors certified? Is recertification required? If the certified installers leave the company, does the roofing contractor maintain certification?

2. Provide a list of certified contractors that will install the roof system for this project and the date they were certified.

3. Does the installer have a formal and written safety program? Yes _____ No _____. If no, please explain.

4. What is the average annual dollar value of contracted work?

5. What is the present dollar value of contracted work in house?

6. Warranties

a. Does the roof system manufacturer have roof systems of the type specified currently in service for at least as long as the specified warranty period. Yes _____ No _____

b. Does the roof system manufacturer have an established, dedicated, and verifiable source of funds, such as a warranty pool, dedicated for warranty claims. Yes ___ No ___ If yes, what is the source of funds?

If no, why not?

c. Does warranty exclude damage from animal fat? Yes _____ No _____

d. Does warranty exclude damage from wind up to and including 73 mph measured at the nearest weather station? Yes _____ No _____

e. Does warranty exclude damage from hail up to and including 1-inch diameter hail measured at the nearest weather station when installed without using a rigid underlayment such as DensDeck or gypsum board? Yes _____ No _____.

f. Does warranty exclude damage from ponding water? Yes _____ No _____

g. Where periodic inspections are required, can the roof system manufacturer provide an inspector that is roof technical specialist that specializes in the type roof system to be installed and shall not be an employee, a representative, an owner, a holder, or a subsidiary of the Contractor, or the installer? This inspector shall also be a (Registered Roof Observer (RRO) and recognized and current member of RCI (Roof Construction Institute). Yes _____ No _____. If no, why?

7. Are all shop drawings prepared by roof manufacturer's employees and at the roof manufacturer's facilities and are the shop drawings sealed by a permanent, full time, direct employee of the roof manufacturer who is a registered professional engineer licensed in the state where the panels are to be installed? Yes ___ No ___

USCA Pickens Salley House Renovation
University of South Carolina Aiken
Aiken, South Carolina
OSE No. H29-I336

Project No. 10293.00
October 24, 2011

mcmillan | pazdan | smith

8. Will the roofing subcontractor that is contractually bound to the General Contractor actually perform all of the installation with its own labor forces or will the installation be subcontracted to another entity? Yes___ No___ If no, why? Remember, subcontracting by the roofing subcontractor is contrary to the specifications?

ASBESTOS FREE CERTIFICATION

For
Restoration of
Pickens-Salley House
University of South Carolina Aiken
Aiken, South Carolina

This is to certify that the material furnished and/or installed by the undersigned subcontractor/vendor during the project, further described by McMillan Pazdan Smith Architects Drawings and Specifications, contain no asbestos fibers.

Subcontractor/Vendor _____

Trade/Material Supplied: _____

Date: _____

Certified by: _____

Title: _____

MOISTURE CONTROL CERTIFICATION

For

USCA Pickens Salley House Renovation University of South Carolina Aiken Aiken, South Carolina

This is to certify that the below listed Contractor has read, understands, and has complied with the following requirements described in this Project Manual:

1. Using the Owner's HVAC system during construction, if permitted, as described in Division 1 General Requirements.
2. A Moisture Control Meeting was conducted in accordance with Division 1 Specification – Project Meetings and responsible entities reviewed all applicable drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics included, but were not limited to, the following:
 1. Reviewing installation details
 2. Delivery problems
 3. Keeping materials dry
 - a. Methods
 - b. Definition of wet materials
 - c. Disposition of wet materials
 - d. Wet materials are to be removed and not installed
 4. Setting windows
 - a. End dams
 - b. Sealing
 - c. Slope and drainage
 5. Window flashing
 - a. End dams
 - b. Sealing
 - c. Slope and drainage
 6. Protecting shingles
 - a. Cigar/cigarette butts
 - b. Foot traffic
 - c. Protect valleys
 - d. Coordination with other trades
 9. Acclimatizing the building
 10. Installing carpentry, woodwork and casework
 11. Installing wood and painting

3. Provide the following information regarding the Moisture Control Meeting. This form is not complete without the requested information:

- Meeting Date:
- Meeting Location:
- Meeting Moderator or Coordinator:
- List of Attendees
- Meeting Minutes

The Contractor further certifies that

1. All sub-contractors, including all tiers of sub-contractors and all suppliers were given copies of these requirements.
2. All construction disciplines, trades, and entities complied with all moisture control and intrusion provisions stipulated, implied, or inferred in the Contract Documents.

General Contractor: _____

Address: _____

Contractor's License Number: _____

By: _____

Title: _____

Date: _____

Phone Number: _____

Submit this executed Moisture Control Certification at Substantial Completion.
Application for Payment will not be processed without this completed and signed form.

USC AIKEN
CONTRACTOR CODE of CONDUCT and PARKING EXPECTATIONS
FOR CONSTRUCTION/RENOVATION PROJECTS

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. Fraternalization between Contractor's employees and USC AIKEN students, faculty or staff is strictly prohibited- zero tolerance! USC AIKEN 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 AIKEN property is strictly prohibited. All person(s) in violation will be asked to leave USC Aiken property, and will not be permitted to return to work for the duration of the project or any future projects.
3. Contractor's employees must adhere to the University's policy of maintaining a drug-free and smoke free/ tobacco free workplace. Smoking is permitted only in designated areas.
4. If applicable, Contractor must sign a Contractor Key Receipt/ Return form before any keys are issued. The forms are to be filled out in the Operations Department located in the Supply and Maintenance Building. 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.
5. A welding permit must be issued before any welding can begin inside a building. Project Manger will coordinate.
6. Contractor must notify the University immediately upon the discovery of suspect materials such as those potentially containing asbestos or other such hazardous materials. These materials must not be disturbed until approved by the USC AIKEN Project Manager.
7. At the beginning of the project, the USC AIKEN Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractor's 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 as approved by the PM and University Police. The lay- down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to University Police. 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.
8. All contractors must wear identification badges or shirts with company name/logo.
9. No shorts, sandals, or inappropriate clothing is permitted.

1. All motorized vehicles on the University campus are expected to travel and park on roadways and/or in parking stalls.
2. All motorized vehicle traffic on USC AIKEN walkways must first receive the Project Manager's authorization. Violator's may be subject to fines and penalties.
3. All Motorized vehicles that leak or drip liquids are prohibited fro traveling or parking on walks or landscaped areas. They will be responsible for clean-up if violated.
4. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated place. Violators may be subject to fines and/or penalties. See item 10 below.
5. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held personally responsible for damages and restoration expenses.
6. Vehicles drivers who park on landscape or walkways must be able to produce written evidence of need or emergency requiring parking on same.
7. All vehicles parked on landscaped, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
8. All drivers of equipment and vehicles will be respectful of university landscape, equipment, structures, fixtures and signage.
9. All incidents of property damage will be reported to the Project Manager.
10. Parking on campus is restricted to spaces designated by Project Manager at the beginning of the project. Once the Project Manager and Contractor agree on how many spaces are needed, the project manager will obtain a placard for each vehicle. This placard must be hung from the mirror of the vehicle, otherwise a ticket will be issued and these tickets cannot be "fixed". Parking spaces are restricted to work vehicles only; no personal vehicles.

General Contractor's Representative

Date

Project Name:

Project Number:

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 02 - SUMMARY OF WORK

Project Description:

The overall project consists of repairing, restoring, and replacing building components and systems, as indicated on the Drawings, at the Pickens-Salley House located on the Campus of the University of South Carolina Aiken, in Aiken South Carolina.

It is understood that, at the time the bid is submitted, the Contractor has read and thoroughly understands the Contract Documents and scope of work and shall be responsible for the content, the implications, the relationship, and the overall impact of the Contract Documents on the Project.

The Work involves an old, high-profile, historically significant structure, and will require close attention to detail and matching the existing materials, construction, and finishes that were used in the early and mid-nineteenth century when the structure was built as indicated. Every effort shall be used to preserve the structure to original and natural state. Only skilled craftsmen who are already experienced in the type work involved with this project and are already highly skilled in their respective trades are to be used on this project. All electrical, communications, and mechanical work, including conduit, wire, duct, and piping, shall be concealed in the construction.

When cleaning, repairing, restoring, and refinishing, it is imperative that a small test area be conducted, in the presence of the Owner and in an inconspicuous location to ensure the original integrity of the area being cleaned, repaired, or refinished is not compromised.

The General Contractor shall enlist the services of skilled, knowledgeable, and sub-contractors, particularly in the field of conservation/restoration/renovation, that employ experienced craftsmen who are already skilled in their respective trades. Each major sub-contractor shall provide a schedule, similar to the schedule provided by the General Contractor, for their respective disciplines, using an acceptable scheduling method and program. The Architect or the Owner reserve the right to request the removal of any worker, craftsman, or sub-contractor that, in the opinion of the Architect or Owner is not qualified to satisfactorily perform the work described in the Contract Documents. .

Systems include, but are not limited to, the following:

Restoration Cleaning: Selective cleaning of wood and metal surfaces. All exterior finish materials and surfaces scheduled to remain shall be cleaned, and/or refinished/repaired patched etc.

Selective Demolition:

Site Work: Limited excavation to slope grade away from structure.

Roof System: Asphalt shingles over a wood substrate.

Window System: Repair and repaint casing and sills

Porch System: Remove and replace porch decking.

Porch Steps: Remove existing and construct new masonry steps.

Lighting: Fluorescent and incandescent to meet lighting requirements.

Contractor Use of Premises: Limit use of the premises to construction activities in areas indicated during each designated phase; allow for Owner occupancy and use by the students and teachers to areas outside of each designated phase.

Confine operations to areas within Contract Limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

Keep driveway and entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials.

Use of Existing Building. Maintain the existing building in a weather tight condition throughout construction. Repair damage caused by construction operations. Take precautions necessary to protect the building and occupants during the construction period. Keep accesses, drives, parking lots, and side streets clear during times designated by the Owner to permit safe and quick loading and unloading of students.

All fire exits from the building, as determined by the local fire marshal, must be maintained during construction. Construction of fences and/or tunnels to maintain these exits is the responsibility of the General Contractor.

END OF SECTION 01 10 02

SECTION 01 14 00 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Contractor's use of the premises.
 2. Owner's occupancy requirements.
 3. Contractor contact with College student and staff.
 4. Background checks.
 5. Substance abuse.
 6. Identification.
 7. Record keeping for Work requirements.

1.2 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.

1.3 DEFINITIONS

- A. Contractor: Defined in State Construction Office South Carolina "Instructions to Bidders and General Conditions of the Contract, Standard form for Construction Projects."
- B. Subcontractor: A contractor, consultant, individual, or other entity that has its contract directly with the (primary) Contractor. Subcontractors are responsible for the implementation of the safety, health, and environmental requirements of this program for the Work to be done by their own employees as well as work done by their subcontractors. For the purposes of this program, a contractor may be either a subcontractor or sub-subcontractor or consultant.
- C. Sub-subcontractor: A contractor, sub-contractor, consultant, individual, or other entity working for a subcontractor (has other contractors under contract to perform Work on the site of this Project). They shall also be responsible for all provisions specified in this program.
- D. Owner: Defined in State Construction Office South Carolina "Instructions to Bidders and General Conditions of the Contract, Standard form for Construction Projects."
- E. Architect: Defined in State Construction Office South Carolina "Instructions to Bidders and General Conditions of the Contract, Standard form for Construction Projects."

1.4 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. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- C. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways and Entrances: Keep driveway and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles. Do not use these areas for parking or storage of materials
 - a. Coordinate with Owner and 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.

1.5 WORK RESTRICTIONS

- A. On-Site Work Hours: Perform Work inside the existing building generally during normal business working hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, except otherwise indicated.
 - 1. Weekend Hours:
 - 2. Early Morning Hours: >
 - 3. Hours for Utility Shutdowns:
 - 4. The primary use of an occupied school facility is for the instructional programming. During periods of standardized and other major testing, pursue quiet operations that do not disturb those operations. No claims for delay will be considered for these days of quiet operation during periods of testing.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than 2 days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Open Flames and Smoking
 - 1. The building is constructed primarily of very old and dry wood that is highly flammable. Ever precaution and preventive measure shall be instituted and maintained throughout the construction period to prevent a fire.
 - 2. Install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10

"Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations." In additions to any other provisions describer in the Contract Documents, the following provisions apply to this project and shall be followed:

1. Prior to beginning any construction activities, meet with the local fire department that services the construction area to resolve details regarding fire watch and communicating with the fire department in case of a fire.
2. Provide fire extinguishers on each floor of the building, with more than one fire extinguisher at the front and rear of the building.
3. As a minimum, Comply with NFPA 80, the IBC 2006 edition, and instruction by the Architect for placement of fire extinguishers in buildings under construction.
4. There shall be a minimum of two qualified fire extinguisher operators on each floor. Submit the names of the designated fire extinguisher operators and name of alternates. Coordinate manning of fire extinguishers to ensure the minimum number of qualified operators is maintained at all times including during breaks.
5. Smoking shall be done only in an area designated for smoking by the State Engineer. These designated smoking areas shall be exterior to the building, at least 25 feet from windows, entrance doors, or air intakes, and on hard surface (no trash, grass or combustible materials) to minimize chance of fire spreading to the building and of sufficient distance from the building to ensure protection from any possible fire that may occur.
6. Remove all trash and combustible waste from inside and outside the building daily. A sudden large accumulation of trash from uncrating items, either inside or outside the building shall be removed immediately after completion of the uncrating.

1.6 CONTRACTOR CONTACT WITH COLLEGE STUDENTS AND STAFF

- A. Individuals working on site, employed by Contractor, Sub-Contractor, or supplier shall be prohibited from having contact with College students and staff.

1.7 BACKGROUND CHECKS

- A. Conduct criminal background investigations of individuals working on Owner's property.
- B. As a minimum, obtain a complete South Carolina statewide criminal background investigation, covering a period for the last 7 years, for individuals and employees performing Work or services for entities such as subcontractors, sub-sub-contractors, and consultants who will perform Work or a service on this Project. In the event that the individual being investigated is from out of state, broaden the investigation to include their home state, as well as the state of South Carolina as outlined above. Obtain information from a company recognized by local law enforcement agency as qualified to do so. Costs associated with these criminal background checks are the responsibility of the Contractor.
- C. The Contractor shall be responsible and liable for the conduct and actions of its employees and individuals working under it.

- D. An individual with the following criminal convictions or pending charges will not be permitted on Owner's Project or property.
 - 1. Rape
 - 2. Child Molestation or Abuse
 - 3. Sexually Oriented Crime
 - 4. Drugs: Felony use, possession or distribution.
- D. An individual with a prior conviction or pending charges contained in the aforementioned list shall not be permitted on the Project Site or the Owner's property.
- E. The Owner may, at any time, request verification of criminal background investigation for an employee or subcontractor on Owner's property.

1.8 SUBSTANCE ABUSE

- A. The use of tobacco products inside Owner's buildings is prohibited. Workers will be asked to leave the site for the balance of the day on their first offense. Workers will be asked to permanently leave the site after the second offense. Set up a designated smoking area away from the building and out of line of sight of students.
 - 1. Remind employees that remaining "drug/alcohol-free" is a condition of employment for this Project. Alcohol and illegal drug use pose a serious threat to workplace safety and health.
 - 2. Implement and enforce a Drug and Alcohol Free Workplace Substance Abuse Program for personnel on this Project. This includes, but is not limited to, educating employees on the Project on the requirements of the Drug Free Workplace Program for this Project. Maintain copies of this program on site for review by the Owner.
 - 3. As a minimum, the program shall include the following:
 - a. The use, possession, sale, transfer, acceptance, or purchase of illegal drugs and controlled substances is prohibited except prescription medications, legally prescribed by a physician. The use, possession of an open container, personal sale, transfer or acceptance of alcohol on the construction Project property or while performing business is strictly prohibited. Violation of this policy will be grounds for immediate termination and may result in a report to the appropriate law enforcement authorities.
 - b. Prescription drugs shall not be used by any person other than the individual to whom it is prescribed. Such substances or non-prescription (over-the-counter) drugs shall be used only as prescribed or indicated. Employees shall be removed from the Project if the side effects of prescription drugs adversely affect the safe completion of their Work activity. Encourage employees to discuss with their supervisor and physician effects of medication that could adversely affect their safety or the safety of others on the Project.
 - c. Employees of Contractors may be tested for substance abuse when involved in an incident that results in injury to them or cause injury to another employee or damage to property. A decision to test an individual for substance abuse following an incident will be based on an objective evaluation of observable signs of

substance abuse regarding an individual's behavior, appearance, speech or body odor. This decision will be made by or in conjunction with a medical professional or other individual with the knowledge to recognize the signs of substance abuse.

- d. Employees who fail a drug or alcohol test shall not be allowed to Work on this Project or enter the Owner's property for 60 days.
- e. Implement a drug-free work place program.

B. Contractor Employee Testing Requirements

1. Construction entities are responsible for pre-employment drug testing of employees hired after they are awarded a contract. File an affidavit that pre-employment drug testing has been done per the minimum requirements below. The affidavit must indicate the name of the employee and be signed by an official of the Contractor.
 - a. Minimum pre-employment drug testing requirements: Personnel hired subsequent to the Contractor being awarded a contract must have verification of successfully passing a pre-employment drug test within thirty calendar days of being allowed on site. (Note the term "Contractor" here refers to both the Contractor and Sub-Subcontractors).
 - b. The drug screening protocol must be at least a 5-panel screen, per NIDA specifications. An initial positive test must be confirmed by a second test using gas chromatography and mass spectrometry (GCMS) methodology or some other method determined by the SC Department of Health and Human Services to be just as reliable.
 - c. The protocols for specimen collection, the specimen custody of control, and the analysis techniques must be acceptable to the Project Safety Director.
 - d. The cost associated with pre-employment and post-accident drug testing shall be the responsibility of the Contractor. The Contractor may arrange local testing with nearest medical facility, mobile testing van, or other recognized testing means that apply.
 - e. Employees must be drug and alcohol free prior to commencing work on the job-site. This includes employees who may only be on site for one day; the only exceptions are the Owner's personnel, employees of governmental regulatory agencies, escorted visitors (an escorted visitor is a person with no job responsibilities who is anticipated to be on the job-site for less than three hours and who is accompanied by authorized job-site personnel), or Owner's consultants, vendors, material-men, waste haulers, suppliers (or their drivers including while engaged in unloading).
2. Post Incident / Post Accident Testing: Implement a post incident / post accident substance abuse testing program on this Project; testing is triggered by any of the following significant incidents:
 - a. Incident with the potential for, or actual property damage or death as a result of the operation of equipment,
 - b. Employee injured in an accident that requires medical treatment other than first-aid,
 - c. When an employee's actions have contributed substantially in an accident,
 - d. Near accident to another employee or the public, or
 - e. Accident resulting in an OSHA-recordable injury or illness, or property damage.

- f. The cost associated with post accident testing shall be the responsibility of the Contractor employing this person.
3. Reasonable Suspicion Testing:
 - a. Person on the site suspected of being under the influence of controlled substances is subject to reasonable suspicion testing.
 - b. Reasonable Suspicion is determined by specific observations concerning the employee's appearance, inappropriate behavior, speech, body odor or performance problems or where there is other evidence to support the suspicion.
 - c. Observations for controlled substances testing purposes may include indications of chronic or withdrawal effects of such substances.
 - d. Necessary observation to trigger reasonable suspicion testing will be made only by a trained supervisor [contractor management]. Under no circumstances will the same supervisor be involved in the testing process.
 - e. Determination of "Reasonable Suspicion" can only be made by an individual qualified to identify reasonable suspicion as related to substance abuse.
 - f. Contractor's Drug and Alcohol Free Workplace Substance Abuse Program shall include a provision that requires an employee to submit to a test if there is reasonable suspicion or belief that he/she is using drugs or alcohol that may be impairing his/her safe job performance.
 - g. Cost associated with the implementation of a Reasonable Suspicion Test shall be the responsibility of the Contractor employing this employee.
 4. Random: The Substance Abuse program must include a provision for random sampling of persons employed by contractors and subcontractors. Positive test results must be provided in writing to the Project in writing to the Project Safety Director.

C. Employee Training

1. Train new and existing employees in the requirements of the substance abuse program/policy and periodically retrain to ensure compliance. Document this training.

1.9 IDENTIFICATION

A. Contractor Employee Identification:

1. Provide a picture identification badge for each employee who successfully passes a background check and substance abuse test and who will be working on this Project. These identification badges shall be worn in plain view while on the Project site or Owner's property. Employees without a proper identification badge will be escorted off the Project site or Owner's property. Costs of providing identification badges shall be the responsibility of the Contractor. As a minimum, the identification badges shall be computer produced and consist of the following information in a large, easily visible and legible font:
 - a. Full Name
 - b. Nickname
 - c. Current color photo

- d. Name of Employer
- e. Date of issue

B. Guest/Visitor Identification:

1. Identification Badges: Provide numbered temporary identification badges for authorized and approved visitors and guests. On arrival, give the guest or visitor a badge to be worn in plain view while on the Project site or Owner's property. Persons without a proper identification badge will be escorted off the Project site or Owner's property. Costs of providing these identification badges shall be the responsibility of the Contractor. As a minimum, the identification badges shall be computer produced and consist of the following information:
 - a. Guest/Visitor
 - b. Badge number
 - c. Contractor's name
 - d. Project name
 - e. Date produced
2. Guest/Visitor Log: Maintain a daily guest/visitor log that shall contain an entry for each non-employee who enters the site. Do not permit guest/visitors to enter the Project site or Owner's property without providing the information requested in the log. As a minimum, record the following information for each log entry:
 - a. Entry number
 - b. Date of arrival
 - c. Time of arrival
 - d. Badge number
 - e. Guest/visitor's full name
 - f. Employer's name
 - g. Vehicle description
 - h. Vehicle license number
 - i. Reason for visit

1.10 RECORD KEEPING

- A. In addition to other documentation required to be maintained at the jobsite by the Contract Documents, maintain a master or central file for documentation related to substance abuse program for sub-contractors, sub-sub-contractors, consultants, and visitors, on the jobsite. Maintain files in such a manner that distinguishes each contractor and their sub-contractors, sub-sub-contractors, consultants, and visitors from other contractors and their subcontractors.
- B. Maintain the following documentation in the safety files:
 1. Results of drug testing.
 2. Results of background tests.
 3. Visitor log, showing date and time of arrival and departure, and purpose of visit.

- C. The Owner and its designated Representatives shall have the right to review documentation at any time upon request. Cooperate with these reviews.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 14 00

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. In some cases, the allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Unit-cost allowances.
 - 3. Quantity allowances.
 - 4. Contingency allowances.
- C. Related Sections include the following:
 - 1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
 - 2. Division 01 Section "Unit Prices" for procedures for using unit prices.
 - 3. Division 01 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.
 - 4. Divisions 02 through 16 Sections for items of Work covered by allowances.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates to coordinate installation.

1.6 UNIT-COST AND QUANTITY ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related Work.

3.3 SCHEDULE OF ALLOWANCES

END OF SECTION 01 21 00

SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. AIA A701 Instructions To Bidders
 - 2. Division 01 Section "References" specifies the applicability of industry standards to products specified.
 - 3. Division 01 Section "Submittal Procedures" specifies requirements for submitting the Contractor's construction schedule and the Submittal Schedule.
 - 4. Division 01 Section "Product Requirements" specifies requirements governing the Contractor's selection of products and product options.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling substitution requests, that do to extenuating circumstances as determined collectively by the Owner and the Architect, require a substitution to be made after award of the Contract. Examples of extenuating circumstances include, specified product is no longer manufactured or available, change in Project scope or design renders the specified product unusable. Failure to account for adequate ordering lead time does not constitute extenuating circumstances.
 - 1. Submittals shall comply with provisions and requirements of the Instructions To Bidders.
 - 2. Substituting products and manufacturers after Contract Execution is allowed when extenuating circumstances arise that require consideration of requesting substitutes for specified products.
 - 3. Substitute product shall be consistent with, comply with and meet the intent of the Contract Documents and shall not increase Contract sum or Contract time.

1.3 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor. The following are not considered to be requests for substitutions:

1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
2. Revisions to the Contract Documents requested by the Owner or Architect.
3. Specified options of products and construction methods included in the Contract Documents.
4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Submit 3 copies of request for consideration, using the Substitution Request Form in Division 00 of Project Manual.
1. Timing: The Architect will consider requests for substitution if received within 60 days after commencement of the Work and the request complies with requirements specified elsewhere in this Project Manual.
 2. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
 - a. Where the Contract Documents list at least three entities, the Architect reserves the option to reject request for a substitute.
 - b. Where the Contract Documents list only one entity without "Or equal" or similar language, a substitute will not be considered.
 - c. Where the Contract Document lists less than 3 entities, a substitute may be reviewed and evaluated on an individual basis.
 3. Performance Criteria: Meet or exceed the minimum performance criteria called for in the Specifications and those published by the manufacturer of the specified item even if they are not specifically mentioned in the Specifications. Submittals not complying with this provision will be considered incomplete, unacceptable, and will not be reviewed.
 4. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Identify the product or the fabrication or installation method to be replaced. Include related Specification Section and Drawing numbers.
 - b. Statement indicating why specified material or product cannot be provided.
 - c. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, necessary to accommodate proposed substitution.
 - e. Product data: Manufacturer's published description, capabilities, operating and performance parameters, options, accessories.

- f. Performance Criteria: Detailed comparison of significant qualities of proposed substitute with those of the Work specified. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated. Prepare supporting data in tabular form showing the submitted criteria next to the each specified performance criteria.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 1) Reports shall be based on same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Samples, where applicable or requested.
 - j. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - k. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - l. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents and is appropriate for the applications indicated.
 - m. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure to produce indicated results.
5. Products of manufacturers other than those specified may be acceptable, however, manufacturers capable of providing specified products shall not, for convenience of their normal production methods, vary from the specified product.
 6. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.
 - a. Form of Acceptance: Change Order.
 - b. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Architect will consider the Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
 1. The request complies with **all** of the following conditions:
 - a. Extensive revisions to the Contract Documents are not required.

- b. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - c. Requested substitution is compatible with other portions of the Work.
 - d. Requested substitution has been coordinated with other portions of the Work.
 - e. Requested substitution provides specified warranty.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to contractors involved.
 - h. Requested substitution will not adversely affect Contractor's construction schedule.
 - i. The request is timely, fully documented, and properly submitted, and
2. The request complies with **one** of the following conditions:
- a. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 - b. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
 - c. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 - d. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 - e. The specified product or method of construction cannot be provided in a manner compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 - f. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 - g. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
3. The Architect will not consider substitutions for materials not ordered properly or when the ordering was not adjusted for lead time. Where a specified product or material cannot be delivered in time for reasons beyond the control of the Contractor, submit the following with the Request For substitution. Requests without the following information will be denied:
- a. Statement from the supplier that the specified products or materials cannot be provided in sufficient time to be incorporated in to the Work.
 - b. Statement from the supplier as to the normal lead time required for the specified products or materials and that this lead is common knowledge in the industry.
 - c. Statement from the supplier that the specified products or materials were ordered within the normal lead-time. If the specified products or materials were not ordered

within the normal lead time, provide a statement from the supplier as to the date the Contractor initially inquired about the specified products or materials, the date the order was placed by the Contractor, and the date the order was received by the supplier.

- B. Final approval of the substitute shall be determined at final completion of the Project. Failure to provide equivalent substitutes in appearance, function, and performance to that specified, may result in removal of the substitute and installation of approved product at Contractor's expense.
- C. Unapproved Products:
 - 1. Product, material, component, or system that is not listed in the Specifications or was not approved by addendum during the Bidding Phase and is installed on this Project without the written approval of the Architect may, at the Architect's discretion, be subject to removal and replacement with a specified product, material, component, or system. Costs, including Project delays, the Architect's expenses, additional testing/inspection, associated with this removal and replacement shall be at the Contractor's expense.
 - 2. Shop drawings: Submitting unapproved products, materials, components, or systems on shop drawings is not an acceptable approval procedure. The Contractor's submittal and the Architect's acceptance of shop drawings, product data, or samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval. Products, materials, components, or systems that were not previously approved by the Architect and are submitted on the shop drawings are also subject to removal at the Contractor's expense even though the shop drawing containing an unapproved product, material, component, or system has been approved by the Architect.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 25 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract Modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Allowances" for procedural requirements for handling and processing allowances.
 - 2. Division 01 Section "Unit Prices" for administrative requirements for using unit prices.
 - 3. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.
 - 4. Division 1 Section "Submittal Procedures" for requirements for the Contractor's construction schedule.
 - 5. Division 1 Section "Payment Procedures" for administrative procedures governing Applications for Payment.
 - 6. Division 1 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

- A. Minor changes in the Work are defined as instructions or interpretations that do not affect the Contract Sum or Contract Time.
- B. The Architect will have the authority to issue supplemental instructions authorizing Minor Changes in the Work, and will do so on AIA Document G710, "Architect's Supplemental Instructions".

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop Work in progress or to execute the proposed change.
 2. Within 20 days after receipt of Proposal Request, unless specified otherwise, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require Modifications to the Contract, Contractor may propose changes by submitting a request for a change to the Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of Work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.

2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing Work to proceed. Owner will reject claims submitted later than 21 days after such authorization.
1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.6 CHANGE ORDER PROCEDURES

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

1.7 CONSTRUCTION CHANGE DIRECTIVE

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

USCA Pickens Salley House Renovation
University of South Carolina Aiken
Aiken, South Carolina
OSE No. H29-I336

Project No. 10293.00
October 24, 2011
m c m i l l a n | p a z d a n | s m i t h

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Allowances" for procedural requirements governing handling and processing of allowances.
 - 2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
 - 4. Division 01 Section "Submittal Procedures" for administrative requirements governing preparation and submittal of Contractor's construction schedule and submittals schedule.

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's construction schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals schedule.
 - c. Contractor's construction schedule.
 - d. List of subcontractors.
 - e. Schedule of allowances.

- f. Schedule of alternates.
 - g. List of products.
 - h. List of principal suppliers and fabricators.
 2. Submit the Schedule of Values to the Architect at earliest possible date but no later than 7 days before the date scheduled for submittal of initial Applications for Payment.
 3. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Submit draft of AIA Document G703 Continuation Sheets.
 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value: Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

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

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Submit progress payments to Architect by the 25th day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's construction schedule. Use updated schedules if revisions were made. Submit schedule with Application for Payment, regardless of whether revised or not.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 3. Submit copies of invoices for each item of material/equipment listed in the Application For Payment. If material/equipment is stored off-site, submit certificate of insurance to substantiate that the materials/equipment are stored in a bonded warehouse.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. Each copy shall include waivers of lien and similar attachments.

- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
 - a. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Products list.
 5. Schedule of unit prices.
 6. Submittals schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's Subcontractors.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Data needed to acquire Owner's insurance.
 16. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Transmittal of required project construction records to Owner.
10. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Construction progress documentation including Construction Schedules and construction reports.
 - 4. Periodic construction photographs required in other sections.
 - 5. Requests for Information (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
 - 1. Division 01 Section "Project Meetings" for submitting and distributing meeting and conference minutes.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
 - 4. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 5. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.
 - 6. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
 - 7. Division 02 Section "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.
- D. The Specifications may contain materials, products, equipment, or procedures that are not applicable to this Project. Refer to the Drawings for materials, products, and equipment applicable to this Project. Materials, products, equipment, or procedures that are not shown or indicated on the Drawings or in the Specifications, but would be inferred as being required by a person who is competent and experienced in the applicable trade/s, shall be furnished and installed to ensure a quality, complete and fully functional installation. If there is a question regarding the applicability of a material, product, equipment, or procedure on the Drawings or

in the Specifications, contact the Architect for an Information at least 10 days prior to date of Bid Opening.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Major Area: A story of construction, a separate building, or a similar significant construction element.
- F. Milestone: A key or critical point in time for reference or measurement.
- G. RFI: Request from Contractor seeking information or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.
 - 1. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of components, including mechanical and electrical.
 - 3. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
 - 4. Make adequate provisions to accommodate items scheduled for later installation.
 - 5. Schedule construction operations in sequence where installation of one part of the Work depends on installation of other components, before or after its own installation.

- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.
 - 9. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 SUBMITTALS

- A. Submittals schedule: Submit 3 copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- B. Preliminary construction schedule: Submit 2 opaque copies.
 - 1. Approval of cost-loaded preliminary construction schedule will not constitute approval of Schedule of Values for cost-loaded activities.
- C. Contractor's construction schedule: Submit 2 opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

1. Submit an electronic copy of schedule, using Microsoft software, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- D. Contractor's Statement of Responsibility: As required in IBC, Section 1706.
- E. Field Condition Reports: Submit 2 copies at time of discovery of differing conditions.
- F. Special Reports: Submit 2 copies at time of unusual event.
- G. Coordination Drawings: Prepare Coordination Drawings for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate required installation sequences.
 - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 3. Number of Copies: Submit 1 opaque and 1 electronic pdf copy of each submittal. Architect will return 1 copy.
 - a. Where Coordination Drawings are required for operation and maintenance manuals, mark up and retain 1 returned copy as a Project Record Drawing.
 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- H. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including cell and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel required for proper performance of the Work.
 - 1. Include special personnel required for coordination of operations with other contractors.

1.7 CONSTRUCTION SCHEDULES

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the Schedule of Values, list of subcontracts, submittals schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.8 CONSTRUCTION PHOTOGRAPHS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
- B. Construction Photographs: Submit 2 prints of each photographic view within 7 days of taking photographs.
 - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade photographic paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
 - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier.

3. Digital Images: Submit a complete set of digital image electronic files as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
- C. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

1.9 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for clarification of the Contract Documents, and if not possible to request information at Project meeting, prepare and submit an RFI in the form specified.
1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing Information and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs.
 7. Drawing number and detail references.
 8. Field dimensions and conditions.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, product data, shop drawings, and other information necessary to fully describe items needing Information.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
 12. Software-Generated RFIs: Software-generated form with substantially the same content as AIA Form G716.
 - a. Attachments shall be electronic files in Adobe Acrobat PDF format.
 - b. Identify each page of attachments with the RFI number and sequential page number.
- C. Architect's Action: Architect will review each RFI, determine action required, and return it.
1. The following RFIs will be returned without action:

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

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's construction schedule.

2. Initial Submittal: Submit concurrently with preliminary schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead-time for manufacture or fabrication.
3. Indicate the following:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (shop drawings, product data, or samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for the Architect's final release or approval.
4. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittals schedule.
 4. Startup and Testing Time: Include not less than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 6. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 7. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.
 - c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall Project schedule.
- G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules and works with currently available Windows operating system.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within 7 days of date established for commencement of the Work.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60

days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's construction schedule within 30 days of date established for commencement of the Work. Base schedule on the Preliminary construction schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. Equipment at Project site.
 - 5. Material deliveries.
 - 6. High and low temperatures and general weather conditions.
 - 7. Accidents.
 - 8. Meetings and significant decisions.
 - 9. Unusual events (refer to special reports).
 - 10. Stoppages, delays, shortages, and losses.
 - 11. Meter readings and similar recordings.
 - 12. Emergency procedures.
 - 13. Orders and requests of authorities having jurisdiction.
 - 14. Change Orders received and implemented.
 - 15. Construction Change Directives received and implemented.
 - 16. Services connected and disconnected.
 - 17. Equipment or system tests and startups.
 - 18. Partial Completions and occupancies.
 - 19. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

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

2.6 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200 pixels.

2.7 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within 1 day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Employ skilled personnel or outside consultant with experience in scheduling and reporting techniques.
- B. Meetings: Individual responsible for scheduling shall attend meetings related to Project progress, alleged delays, and time impact.
- C. Contractor's construction schedule updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate Actual Completion percentage for each activity.

- D. Distribution: Distribute copies of approved schedule to Architect, Owner, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images:
1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
 2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available for reference. Identify photographs same as for those submitted to Architect.
 3. Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - a. Date and Time: Include date and time in filename for each image.
 - b. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available for reference. Identify images same as for those submitted to Architect.
- C. Periodic Construction Photographs: Take color, digital photographs, coinciding with construction activities for which photographs are called for. Select vantage points to show particular issues to be documented.

END OF SECTION 01 31 00

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for project meetings including, but not limited to, the following:
 - 1. Preconstruction conferences.
 - 2. Preinstallation conferences.
 - 3. Moisture coordination meeting.
 - 4. Ceiling coordination meeting.
 - 5. Project meetings, including safety meetings.
- B. Related Sections include the following:
 - 1. Division 01 Section "Project Management & Coordination" for a description of the division of Work among separate contracts and responsibility for coordination activities not in this Section, for preparing and submitting Contractor's construction schedule.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting the Contractor's construction schedule.
- C. The following sections specify requirements for a preinstallation conference:
 - 1. Division 09 Section "Painting"
 - 2. Division 31 Section "Termite Control"
 - 3. Division 32 Section "Grassing"

1.3 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to invited attendees.
 - 3. Minutes: Have an experienced note-taker record and type complete and accurate meeting minutes for scheduled and unscheduled meetings that pertain to the Project, regardless of

who called or scheduled the meeting. Record significant discussions and agreements achieved. Organize the minutes of the proceedings in chronological order. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 72 hours of the meeting.

4. Minutes shall include, but are not limited to the items listed below.
 - a. Convening time, date, and place
 - b. Attendees
 - c. Discussion topics and how initiated
 - d. Action items and person responsible for item
 - e. Key events
 - f. Decisions made and by whom
 - g. Unresolved issues and disposition of those issues

1.4 PRECONSTRUCTION CONFERENCE

- A. Schedule a preconstruction conference before starting construction, at a time convenient to Owner, and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments. Conduct the preconstruction conference in accordance with Table 7.3.1 of Chapter 7 Office of the State Engineer
 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. LEED requirements.
 - l. Preparation of Record Documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.

- t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
 - x. Working hours.
3. Minutes: Record and distribute meeting minutes.

1.5 PREINSTALLATION CONFERENCES

- A. Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written requirements and recommendations.
 - n. Project Specifications.
 - o. Documentation requirements.
 - p. Warranty requirements.
 - q. Compatibility of materials.
 - r. Acceptability of substrates.
 - s. Temporary facilities and controls.
 - t. Space and access limitations.
 - u. Regulations of authorities having jurisdiction.
 - v. Testing and inspecting requirements.
 - w. Installation procedures.
 - x. Coordination with other work.
 - y. Required performance results.
 - z. Protection of adjacent work.
 - aa. Protection of construction and personnel.

3. Have an experienced person record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Remind the manufacturer's representative of provisions in the Contract Documents that require him/her to inspect not only for compliance with the manufacturer's requirements but also compliance with the Specifications when Specifications are more stringent. Inspection reports shall include deviations from both manufacturer's requirements and the Specifications. Provide the Manufacturer's representative with a copy of the Project Specifications including Addenda.
6. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
7. A sample agenda with discussion topics for a pre-roofing conference is included at the end of this section.

1.6 MOISTURE COORDINATION

- A. Conduct a moisture coordination meeting prior to installing any materials related to moisture intrusion.
 1. Complete the Moisture Certification Form and submit at Substantial Completion. Application For Payment will not be processed without the completed form.
- B. Representatives of the following entities shall be in attendance: Architect, General Contractor, and installers of the HVAC, masonry, windows, waterproofing, damproofing, vapor retarder, and roofing. Representatives of the applicable materials manufacturers are encouraged to attend also. Attendee shall be qualified and authorized to make or suggest changes, modifications, or revisions to installation details.
- C. Prior to convening this meeting, responsible entities shall review all applicable drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics include, but are not limited to, the following:
 1. Reviewing installation details
 2. Delivery problems
 3. Keeping materials dry
 - a. Methods
 - b. Definition of wet materials
 - c. Disposition of wet materials
 - d. Wet materials are to be removed and not installed
 - e. Protection of lumber, treated and untreated
 - f. Moisture content of treated lumber, KD to 16 percent
 - g. Project thermometer and location
 4. Below grade waterproofing and backfilling
 - a. Coordination with other trades
 - b. Drain pipe
 - c. Backfill
 - d. Membrane protection from light and puncturing
 - e. Penetration sealing
 - f. Pictures

5. Vapor retarders
 - a. Coordination with other trades
 - b. Location
 - c. Sand blotters
 - d. Membrane protection from light and puncturing
 - e. Rebar installation
 - d. Joints, seams, and terminations
 - f. Penetration sealing
 - g. Pictures
6. Through-wall flashing and Weeps
 - a. Location
 - b. Inspection and photos
 - c. Joints and seams
 - d. End dams
 - e. No patching
 - f. Cavity clearance and cleanliness
7. Setting windows
 - a. End dams
 - b. Sealing
 - c. Slope and drainage
 - d. Inspection of opening by window manufacturer
8. Window flashing
 - a. End dams
 - b. Sealing
 - c. Slope and drainage
9. Protecting roof membrane
 - a. Cigar/cigarette butts
 - b. Foot traffic
 - c. Coordination with other trades
10. Installing carpentry, woodwork and casework
 - a. Building in the dry
 - b. Acclimating the building
 - c. All wet work complete
11. Installing drywall, insulation, and painting
 - a. Building in the dry
 - b. Acclimating the building
 - c. All wet work complete
12. Installing floor covering
 - a. Testing substrate for moisture
 - b. Relative humidity test
 - c. Calcium chloride test
 - d. Who conducts the test
 - e. Procedures if moistures level are too high
 - f. Importance of concrete mixes with low W:C ratio

1.6 CEILING COORDINATION MEETING

- A. Conduct a ceiling coordination meeting prior to installing overhead systems and materials.

- B. Attendees: Architect, Contractor, and installers of the HVAC, fire sprinkler, electrical and data distribution, lighting and ceiling systems. Representatives of the applicable materials manufacturers are encouraged to attend also. Attendee shall be qualified and authorized to make or suggest changes, modifications, or revisions to installation details.
- C. Prior to convening this meeting, responsible entities shall review applicable Drawings, details, shop drawings, and manufacturer's data for conflicts, compatibility, and coordination problems during installation. Discussion topics include, but are not limited to, the following:
 - 1. Reviewing installation details
 - 2. Location of items in finished ceiling
 - 3. Height of systems above ceiling
 - 4. Space conflicts

1.7 SAFETY MEETINGS:

- A. Conduct weekly safety meetings with all sub-Contractors currently and shortly to be working on site. Coordinate dates of meetings with those of progress meetings.
 - 1. Provide meeting minutes to Owner within 24 hours of meeting.

1.8 PROGRESS MEETINGS:

- A. Conduct progress meetings at monthly (minimum) intervals. Coordinate dates of meetings with preparation of payment requests. Notify the Owner and the Architect of scheduled meeting dates.
 - 1. Attendees: In addition to representatives of Owner and Architect, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion related to status of Project.
 - a. Contractor's construction schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.

- 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
 - 21) Safety.
 - 22) Security.
3. Minutes: Record the meeting minutes.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- B. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner and Architect, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion related to status of Project.
 - a. Combined Contractor's construction schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions

- are required to ensure that current and subsequent activities will be completed within the Contract Time.
- b. Schedule Updating: Revise Combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Safety Issues.
 - d. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 19

Attachments: Following Sample Agenda

Masonry Preinstallation

Roofing Preinstallation Conference for Single-Ply Roofs

Roofing Preinstallation Conference for Standing-Seam Metal Roofs

Sample agenda(s) include list of discussion topics for the preinstallation conferences scheduled by the Contractor. The discussion topics are suggested and are not limited to those noted.

McMillan Pazdan Smith
 MASONRY PRE-INSTALLATION MEETING

The following summarizes the items and issues that were discussed during the masonry pre-installation meeting that was held for the listed Project. Pertinent comments during the meeting are included in this agenda. Please notify the Architect of any errors or omissions.

- DATE:
- PROJECT NAME:
- PROJECT NO.:
- PROJECT LOCATION:
- MEETING LOCATION:
- ATTENDEES:
 - Owner:
 - Architect: McMillan Pazdan Smith
 - General Contractor:
 - Masonry Contractor:

Goal is to provide the best possible masonry construction and eliminate the potential for moisture intrusion into the structure and the appearance of efflorescence.

SUBMITTAL DATA

Check the following data that has been submitted prior to this meeting:

Item	Manufacturer's Spec's	Samples
Masonry Cleaners		
Flashing		
Weeps		
Integral water repellent		
Certification that lightweight CMU has passed and meets UL tests for required UL ratings and complies with ACI 216.1.		
Certified list of materials/components of CMU and the actual proportions for each component.		
Certification that CMU does not contain from pumice, scoria, cinder, bottom ash, or tuff.		
Efflorescence Tests: Submit copies of the results of the efflorescence test conducted on the brick and mortar.		
Absorption Tests: Submit copies of the results of the Rate Of Absorption Test to the Architect.		
Test results from an independent testing laboratory certifying that		

the mortar cement to be provided meets the physical requirements for ASTM C1329-96. Compressive Strength (7 days): 500 psi; (28 days): 1900 psi Flexural Bond (28 days): 100 psi Air Content: Min.: 8% Max. 14%		

DISCUSSION ITEMS

How many masons will be used?

Will installer have a full-time non-working superintendent on site at all times? Yes: No

Name of the Superintendent:

Ratio of foremen to masons? If other than 1:10, ratio. Yes: No

What are the contingencies if the project falls behind?

Have all materials been received: Yes: No

Are there any expected problems in material availability or delays? No.: Yes:

Explain:

Where will the material be stored and has this been coordinated with the Owner?

Will materials be stored protected and under cover?

Check which materials have been allocated, which have been delivered, and which have been staged on site:

Material	Allocated	In Delivery/Receive Date	Received	Staged
Brick				
CMU				
Reinforcing				
Mortar				
Sand				
Water Repellent				
Add mixtures				
Mortar net				
Through wall flashing				
Weeps				

Where will equipment be set up? Coordinate with the Owner.

When will installation start?
What is estimated date of completion?

KEY SPECIFICATION/ DISCUSSION ITEMS

The Architect is not responsible for the direction or supervision of the Contractor's work or employees. Neither the presence or the absence of the Architect from the project site, nor tests or observations or the lack of same by the Architect relieve the Contractor for ultimate responsibility for defects found in the work, either now or in the future.

Stain Prevention:

1. Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted.
2. Remove grout, mortar, and soil immediately that comes in contact with such masonry.
3. Protect base of walls from rain-splashed mud and mortar splatter by coverings spread on ground and over wall surface.
4. Protect sills, ledges, and projections from mortar droppings.
5. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
6. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt on completed masonry.

Cold Weather

1. No frozen or frosted materials
2. No masonry Work when the ambient or surface temperatures are 40 deg. F or less or if temperatures are forecasted to fall below 32 degrees within 48 hours of installing masonry
3. If masonry performed in cold weather, use third party inspector,

Hot Weather

1. Protect mortar from rapid evaporation.
2. No masonry at temperatures above 100 deg. F.

Laying Masonry

1. No masonry in rain.
2. Wet brick if IAR is 30/gr/30 sq. ft per ASTM C67. Do not wet CMU
3. No masonry laid during cold weather unless cold weather procedures followed.
4. Mortar mix actually measured (sand is boxed, water by bucket, cement and lime by bag)
5. Use no mortar older than 2 hours used. Temper prior to 2 hours old.
6. Correct mortar type used Type S specified. OK to use type N for non-reinforced veneer.
7. Add integral water repellent added to mortar mix
8. Bond pattern, Running on brick.
9. Joint thickness: 3/8 inch
- 11 Construct full head joints
12. Masonry units uncracked and sound
13. Lay all units in full bed of mortar
14. Fill CMU solid with grout where required
15. Water resistant drainage plain satisfactory
16. Fill movement joints
17. Cover tops of walls, sills, etc., at end of day.

18. Keep cavity air space at 2 inches
19. Do not use Portland cement to repair old masonry.

Through Wall Flashing

1. Shelf angles flashed
2. Lintels installed and flashed
3. Copper is undamaged?
4. CMU Backer: Turn backup minimum 16 inches and terminate in masonry joint.
5. Metal Stud Backer: Turn up 16 inches and fasten with termination bar and sealed.
6. Set flashing in a bed of mortar and seal edges completely and continuously
7. Extend flashing past face off brick
8. Windows flashed
9. Form a drip
- 10 Use preformed end dams and corners and properly sealed
11. GC to photo flashing installation
12. Keep cavity clear and free of mortar

Weeps And Vents

1. Cellular type
2. Spaced correctly 24 oc per BIA Tech Note 7.
3. Properly fitted to the head joint
4. Located properly above the flashing
5. Unclogged

Tooling

- 1 Tooled when thumb print hard
2. Concave smooth surface
3. Tooled surface smooth

Cleaning

1. In-process masonry cleaning
2. Cleaned daily with bucket and brush
3. Preferably no power cleaning. Low pressure if used

Insulation (CMU backer)

1. Install in a full bed of adhesive per BIA Tech Note 27 to ensure full contact of insulation against substrate.
2. Tape all joints.

Staging

No holes in tarps.

All materials to be covered completely with tarps secured tightly at end of each day and when wet weather is imminent. Manufacturer's plastic wrapping is not acceptable staging cover.

All materials that have become wet or show signs of moisture will be marked and promptly removed from the site. Installed materials that are suspected of being wet will be torn out and replaced.

Materials that are staged on grass or earth shall be staged on polyethylene.

Mock Up Review: A full wall construction mock up should have been constructed in accordance with the specifications. As a minimum, review the mock up for the following criteria:

1. Corner construction.
2. Flashing terminations.
- 3 Proper cavity air space
4. Brick properly cleaned
5. Grout observation holes
6. Composite construction.
7. Windows flashed and sealed
8. Expansion and control joints.
9. Joint work including tooling.
10. Masonry sealer properly applied
- 11 Preformed end dams and corners.
12. Reinforcing placement on backup
13. Flashing terminates in CMU joints
14. Typical openings and terminations.
15. Flashing joints overlapped and sealed.
16. CUM cells filled in reinforced masonry
17. Flashing not recessed behind brick face.
18. Vertical reinforcing placement and grouting
19. Insulation properly attached in full bed of adhesive
20. Flashing extends behind sheathing on metal stud construction
21. No visible chips, cracks, voids, or other imperfections that are objectionable

SECTION 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Daily construction reports.
 - 3. Field condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 SUBMITTALS

- A. Format for Submittals: One paper copy.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 3. Total Float Report: List of all activities sorted in ascending order of total float.
 4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.
- D. Field Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Startup and Testing Time: Include not less than 15 days for startup and testing.
 3. Final Acceptance: Indicate completion in advance of date established for Final Acceptance, and allow time for Architect's administrative procedures.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Use of premises restrictions.
 - e. Provisions for future construction.
 - f. Seasonal variations.
 - g. Environmental control.
 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, and final acceptance.
1. Notify Architect and Owner 48 hours prior to planned milestone inspection.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 60 days after date established for commencement of the Work.

- a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to correlate with Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the start-up network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

- E. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Principal events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
 9. Average size of workforce.
 10. Dollar value of activity (coordinated with the schedule of values).
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.3 REPORTS

- A. Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events.
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.

16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Final Acceptance authorized.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final Completion construction photographs.
- B. Related Sections include the following:
 - 1. Division 01 Section "Historic Treatment Procedures"
 - 2. Division 02 Section "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.

1.3 SUBMITTALS

- A. Qualification Data: For photographer.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
- C. Construction Photographs:
 - 1. Digital Images: Submit a complete set of digital image electronic files as a Project Record Document on CD-ROM or DVD. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
 - 2. Identification: With each submittal of digital images on CD-ROM or DVD, provide a list of images with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Engineer, Architect, and Owner.
 - d. Name of Contractor.
 - e. Date photograph was taken if not date stamped by camera.

- f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction for each image.
- g. Unique sequential identifier (file name) for each photograph submitted.

1.4 QUALITY ASSURANCE

- A. **Photographer Qualifications:** An individual who has been regularly engaged as a professional photographer of construction projects for no less than three years.

1.5 COORDINATION

- A. **Auxiliary Services:** Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.6 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. **Digital Images:** Provide images in uncompressed TIFF or RAW format, produced by a digital camera with minimum sensor size of 8.0 mega pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. **Photographer:** Engage a qualified commercial photographer to take pre-construction and post construction photographs. Construction Progress photos can be taken by Contractor but must meet specified requirements.
- B. **General:** Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- C. **Digital Images:** Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. **Date and Time:** Include date and time in filename for each image.

- D. Preconstruction Photographs: Before commencement of demolition and starting construction, take digital photographs of Project site, including existing items to remain during construction, from different vantage points, or as directed by Engineer and Architect.
1. Take a minimum of 30 photographs to show existing conditions adjacent to areas of construction before starting the Work.
 2. All preconstruction photographs must be submitted and approved by Engineer and Architect before any work begins.
- E. Periodic Construction Photographs: Take a minimum of 30 digital photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Engineer and Architect Directed Construction Photographs: From time to time, Engineer and Architect will instruct photographer about number and frequency of digital photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
- G. Final Completion Construction Photographs: Take 30 color photographs after date of Substantial Completion for submission as Project Record Documents. Engineer, Architect, and Owner will direct photographer for desired vantage points.
1. Do not include date stamp.
- H. Additional Photographs: Engineer, Architect, and Owner may issue requests for additional photographs, in addition to periodic photographs specified.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Immediate follow-up when on-site events result in construction damage or losses.
 - b. Substantial Completion of a major phase or component of the Work.
 - c. Extra record photographs at time of final acceptance.
 - d. Owner's request for special publicity photographs.

END OF SECTION 01 32 33

SECTION 01 33 00 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Shop drawings larger than standard sizes 8 ½" x 11", 8 ½" x 14" and 11" x 17", shall be submitted in the form of one reproducible set for review. Upon completion of the review, the Designer shall return the reproducible set with clearly identified marks to the Contractor to distribute as necessary.
- C. Submittals Schedule: Submit one copy of schedule within 30 days of Notice to Proceed. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- D. Processing Time: Submittals and shop drawings will be provided to the Designer such that related items can be reviewed simultaneously in packages and no more than three (3) shop drawings (large format) or five (5) submittals (small format) are being reviewed at any one time without prior consent of the Designer. In the event that the Contractor fails to provide the submittals at the time indicated on the approved schedule, the Designer shall be required to return the submittal within twenty (20) calendar days of receipt or at an alternate time mutually agreed to by the Designer and the Project Expediter. No extension of the Contract Time will be

authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Submittals shall be returned to the Contractor not later than twenty (20) calendar days from the date of receipt by the Designer for the Contractor's use or for correction and resubmittal as noted by the Designer. When resubmittals are required, the resubmittal shall be returned not later than five (5) calendar days from receipt by the Designer.

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

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 10 00.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

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

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

1. Transmittal Form: Use form provided by Architect.

- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked "No Exceptions Taken" or "Make Corrections Noted"

- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

1.3 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of requested CAD files will be provided to the General Contractor for Contractor's use in connection with Project. Electronic copies of the requested drawings will be provided to the General Contractor upon receipt of a signed release form. No files will be provided twice.
 1. The documents, including those in electronic form, prepared by the Architect or the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor nor any subcontractor, sub-subcontractor, material or equipment supplier shall own or claim a copyright in the documents prepared by the Architect or the Architect's consultants and unless otherwise indicated the Architect and the Architect's consultant shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. Copies, including those in electronic form, furnished to the Contractor are for use solely with respect to this Project and shall not be used on other projects for additions to this Project outside the scope of Work. The Contractor, subcontractor, sub-subcontractor, material or equipment suppliers are authorized to use and reproduce applicable portions of the documents appropriate to and for use in the execution of their Work under the Contract Documents.
 2. The Contractor, subcontractor, sub-subcontractor, material or equipment supplier shall not submit all for portions of the Contract Documents for Shop Drawings. All Shop Drawings must be prepared specifically for this project by the appropriate Contractor, subcontractor, sub-subcontractor, material or equipment supplier. Documents, including those in electronic form supplied by the Architect or the Architect's consultants may only be used in the preparation of Shop Drawings as background information.
 3. Electronic files are not Construction Documents. Significant differences may exist between the electronic files and the Construction Documents. The Architect and the Architect's consultants disclaim and make no representations, or warranties, expressed or implied, as to the merchantability, condition, accuracy, use, fitness for a particular purpose, suitability, durability of the information or the medium in or on which the information is furnished, of the transferred electronic information. The Architect and the Architect's consultants shall not be liable for any damages; use of the electronic files is at the sole risk of the Contractor, Subcontractor, Sub-subcontractor, material or equipment supplier. The Contractor, Subcontractor, Sub-subcontractor, material or

equipment supplier, by use of electronic files, shall not be relieved of their duty to fully comply with the Contract Documents, including without limitation, the need to check, confirm and coordinate their work.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Manufacturer's catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Compliance with specified referenced standards.
 - i. Testing by recognized testing agency.
 - 4. Number of Copies: Unless indicate otherwise, submit 2 copies in addition to the number required for Contractor's use of each submittal.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Architect's CAD files may be used as only as background for shop drawings and after execution of Architect's release form.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.

- h. Schedules.
 - i. Notation of coordination requirements.
 - j. Notation of dimensions established by field measurement.
 - k. Relationship to adjoining construction clearly indicated.
 - l. Seal and signature of professional engineer if specified.
 - m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
 3. Number of Copies: Submit two opaque (bond) copies of each submittal. Architect will return one copy.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned.

- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
 - 1. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
- F. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - 3. Test and Inspection Reports: Comply with requirements specified in Section 01 40 00- Quality Requirements.
- B. Coordination Drawings: Comply with requirements specified in Section 01 31 00 - Project Management and Coordination.
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- L. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- M. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.
- R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Statement on condition of substrates and their acceptability for installation of product.

2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
- S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- T. Material Safety Data Sheets (MSDS): MSDS sheets will be furnished to Owner in a three ring binder with index for materials; do not submit to Architect.
1. Architect will not review submittals that include MSDS and will return them for resubmittal.

2.3 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. No Exception Taken: Indicates the submittal has been reviewed and appears to comply with the Contract Documents. Work as submitted may proceed without further submittal review by Architect.
 - 2. Make Corrections Noted: Indicates the submittal has been reviewed, and with indicated notations appears to comply with the Contract Documents. With the incorporation of the notations, Work submitted may proceed without further submittal review by Architect.
 - 3. Revise and Resubmit: Indicates that submittal is incomplete. Prior to proceeding, complete and correct work must be resubmitted to Architect for further review.
 - 4. Rejected: Submittal is not in compliance with requirements of Contract Documents. Work that complies with Contract Documents must be submitted for review.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.
- F. Submittal requires signature and approval of only the Design professional responsible for the scope of work.

END OF SECTION 01 33 00

SECTION 01 35 91 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in the entire Project, including general project guidelines, selected historic preservation resources and the following specific work:
 - 1. Historic removal and dismantling.
- B. Related Sections:
 - 1. Division 01 Section "Construction Progress Documentation" for specific requirements for project documentation.
 - 2. Division 01 Section "Photographic Documentation" for specific requirements for photographs.
 - 3. Division 01 Section "Quality Requirements"
 - 4. Division 01 Section "Temporary Facilities and Controls"
 - 5. Division 01 Section "Product Requirements and Product Options and Substitutions" for specific requirements on product substitution for historic materials.
 - 6. Division 01 Section "Cutting and Patching" for requirements of cutting and patching of historic building materials.
 - 7. Division 01 Section "Execution" for execution requirements for all work included in the contract documents.
 - 8. Division 02 Section "Selective Structure Demolition" for requirements of demolition of historic building materials.

1.3 REFERENCES

- A. United States Department of the Interior, Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings.
- B. United States General Services Administration: Historic Preservation Technical Procedures.
- C. National Park Service Historic Preservation Briefs
 - 1. Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings
 - 2. Preservation Brief 16: The Use of Substitute Materials on Historic Building Exteriors

3. Preservation Brief 17: Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
4. Preservation Brief 18: Rehabilitating Interiors in Historic Buildings
5. Preservation Brief 21: Repairing Historic Flat Plaster – Walls and Ceilings
6. Preservation Brief 22: The Preservation and Repair of Historic Stucco
7. Preservation Brief 28: Painting Historic Interiors
8. Preservation Brief 35: Understanding Old Buildings: The Process of Architectural Investigation

1.4 DEFINITIONS

- A. Consolidate: To strengthen loose or deteriorated materials in place.
- B. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.
- C. Existing to Remain: Existing items that are not to be removed or dismantled.
- D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance which are important to the successful preservation, conservation, restoration, and reconstruction as determined by the Owner and Engineer of Record (EoR). Designated historic spaces, areas, rooms, and surfaces may be indicated on drawings.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by the Owner or EoR.
- F. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.
- G. Refinish: To remove existing finishes to substrate and apply new finish to match original or as otherwise indicated.
- H. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.
- I. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.
- J. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

- K. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- L. Replicate: To reproduce in exact detail, materials, and finish, unless otherwise indicated.
- M. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.
- N. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.
- O. Retain: To keep existing items that are not to be removed or dismantled.
- P. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials, unless otherwise indicated.
- Q. Salvage: To protect removed or dismantled items and deliver them to Owner.
- R. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure or to stabilize loose or detached original material in an effort to halt deterioration or future loss of historic material
- S. Strip: To remove existing finish down to base material, unless otherwise indicated.

1.5 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object.
- B. Coordinate with Owner's representative, who will establish special procedures for dismantling and salvage.

1.6 SUBMITTALS

- A. Construction Schedule for Historic Treatments: Indicate for the entire Project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:
 - 1. Detailed sequence of historic treatment work, with starting and ending dates, coordinated with Owner's continuing operations and other known work in progress.
- B. Qualification Data: Qualification data for firm and personnel specified in "Quality Assurance" Article that demonstrates that both firm and personnel have capabilities and experience complying with requirements specified. For each project list project name, address, architect,

conservator, supervising preservation agency, scope of contractor's work, and other relevant information.

1. For historic preservation treatment specialist, field supervisors, and workers provide a list of at least five completed projects similar in size and scope to the work required on this Project.
2. For historic removal and dismantling specialist, historic removal and dismantling specialist's field supervisors, and historic removal and dismantling specialist's workers.
3. For historic preservation treatment specialist, field supervisors, and workers.

C. Preconstruction Documentation:

1. Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by historic treatment operations.
2. All areas should be photographed before historic preservation treatment begins and submitted to Owner, Engineer and Architect. (See Section 013233 "Photographic Documentation" for photo requirements.)

D. Historic Preservation Treatment Program: Prepare a written plan for historic treatment for the whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other sections. Submit before work begins.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.

E. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include each fire watch's training, duties, and authority to enforce fire safety. Submit before work begins.

F. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

G. Product Data:

1. Manufacturer's technical data for each product indicated including chemical analysis, recommendations for their application and use, and any other available technical data. Include test reports and certifications substantiating that products comply with requirements.
2. Manufacturer's offering other than brand name items identified in the procedure should furnish adequate information to ensure that a determination can be made as to the equality of the products offered.

H. Samples:

1. Clearly labeled samples of all materials to be used on the job should be submitted for approval before work starts.

2. The approved samples will become the standard materials used on the job. Substitutions will not be permitted without consent of Architect, Engineer and Owner.

I. Quality Control Submittals

1. Submit written program for each phase of the process including protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work.
2. If alternative methods and materials to those indicated are proposed for any phase of work, provide written description to the Engineer, Architect, and Owner, including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this project.
3. The contractor should supply proof of work on this type of project by submitting a list of pertinent projects the subcontractor has worked on which includes the scope of work, the budget for the scope of work, and a way to contact the owner and architect of each project.

J. Design Data/Test Reports/Certificates:

1. Routine testing of proposed materials and of final work for compliance with the procedure will be carried out by the Owner and Architect/Engineer or his/her representative.
 - a. Cleaning methods should be tested prior to selecting one for use. The simplest and least aggressive method(s) should be selected.
 - b. The level of cleanliness desired also should be determined. A like-new appearance is both inappropriate and requires an overly harsh cleaning method.
2. If test results show that performance criteria are not met, removal and repair of rejected work should be performed.
3. All certificates required by manufacturer for installation of materials or use of equipment must be submitted.

1.7 QUALITY ASSURANCE

A. Historic Preservation Treatment Specialist Qualifications: An experienced firm regularly engaged in historic preservation treatments similar in nature, materials, design, and extent to this work as specified in each section, and that has completed a minimum of five recent projects and/or five years experience in work similar to this procedure with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work. Additional personnel must also have experience.

1. Field Supervisor Qualifications: Full-time supervisors experienced in historic preservation treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site during times that historic preservation treatment work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
2. Worker Qualification: Persons who are experienced in historic preservation treatment work of types they will be performing.

B. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist with experience in removal and dismantling of historic architectural features, objects,

and/or materials similar in nature and extent to that indicated for this Project. General selective demolition experience is not sufficient experience for historic removal and dismantling work.

1.8 REGULATORY REQUIREMENTS

- A. Comply with governing EPA notification regulations before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction. The required research report and manufacturer's data shall be on site and used for reference.
 - 1. Conform to all safety guidelines
 - 2. For Cleaning: Comply with municipal and Federal regulations governing cleaning, chemical waste disposal, scaffolding and protection of adjacent surfaces.
- B. Standards: Comply with ANSI/ASSE A10.6.
- C. Comply with all OSHA regulations and safety guidelines for scaffolding and protection.

1.9 HISTORIC TREATMENT PRECONSTRUCTION CONFERENCE:

- 1. Conduct conference on site.
- 2. General: Review methods and procedures related to historic treatment including, but not limited to, the following:
 - a. Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.
 - b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
 - c. Review qualifications of personnel assigned to the work and assign duties.
 - d. Review areas where existing construction is to remain and requires protection.
- 3. Removal and Dismantling:
 - a. Inspect and discuss condition of construction to be removed or dismantled.
 - b. Review requirements of other work that relies on substrates exposed by removal and dismantling work.

1.10 SITE PROTECTION

- A. Protect all landscape work, adjacent to or within maintenance work areas:
 - 1. Provide plank barriers to protect tree trunks. Bind spreading shrubs.
 - 2. Covering should allow plants to breath and should be removed at the end of each work day. Do not cover plant material with a waterproof membrane for more than 8 hours at one time
 - 3. Set scaffolding ladder legs away from plants and other landscape features. Pruning requests should be directed by owner.
- B. Protect persons, surrounding surfaces of building, and building site from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
 2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.
 3. Contain dust and debris generated work and prevent it from reaching the public or adjacent surfaces.
 4. Protect floors and other surfaces along haul routes from damage, wear, and staining.
 5. Provide supplemental sound-control treatment to isolate work from other areas of the building.
 6. Provide protection against spreading water at or beyond the work area by sheeting and tarpaulins.
 7. Provide masking or covering on adjacent surfaces and permanent equipment. Secure coverings without the use of adhesive type tapes. Impervious sheeting which produces condensation should not be used.
- C. Provide protection from water damage to building, structure or building contents. Provide a method to prevent solids such as stone, mortar, paint, residue from entering the drains and drain lines. Contractor shall be responsible for cleaning out drains and drain lines that become blocked or filled by sand or any other solids because of work performed under this contract.
- D. All necessary precautions shall be taken to protect all parts of the historic building not being repaired from the effects of the work, including excessive amounts of water that should not be allowed to pond in any areas.

1.11 PROTECTION FROM FIRE

- A. General: Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Instruct personnel in methods and procedures. Post warnings and information.
- B. Follow fire-prevention plan and the following.
1. Comply with NFPA 241 requirements unless otherwise indicated.
 2. Remove and keep area free of combustibles including, rubbish, paper, waste, and chemicals, except to the degree necessary for the immediate work.
 3. Prohibit smoking by all persons within the Project work and staging areas.
- C. Heat-Generating Equipment and Combustible Materials: Not allowed on site.
- D. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire watch is trained in fire-extinguisher and blanket operation.

1.12 PROTECTION AND STORAGE OF HISTORIC MATERIALS

- A. The historic importance of the material or feature shall be determined by Architect and Engineer before repairs begin. The item's merit, in terms of age, uniqueness of design, materials, size, technological development, association with persons or events, exceptional workmanship or design qualities, must be understood before decisions regarding repair, maintenance and preservation can be made.
- B. Salvaged Historic Materials:
1. Clean only loose debris from salvaged historic items unless more extensive cleaning is indicated.
 2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
- C. Historic Materials for Reinstallation:
1. Repair and clean historic items as indicated and to functional condition for reuse.
 2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.
- D. Existing Historic Materials to Remain:
1. Protect construction indicated to remain against damage and soiling from construction work.
 2. Protect with temporary protections and construction.
 3. Do not deface or remove existing materials.
 4. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Engineer.
- E. Written consent must be obtained from Owner, Architect, and Engineer, if remaining items need to be removed. Items should be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.
- F. When taken from their existing locations, catalog and store historic items within a weather tight enclosure where they are protected from wetting by rain, snow, condensation, or ground water, and from freezing temperatures.
1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans elevations, sections, or photographs by annotating the identifying marks. Secure stored materials to protect from theft.

- G. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

1.13 PROJECT CONDITIONS

- A. General Size Limitation in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.
- B. Conditions existing at time of inspection for pricing purpose will be maintained by Owner as far as practical.
- C. Notify Architect, Engineer and Owner of discrepancies between existing conditions and Drawings before proceeding with the work or if any visible change in the integrity of the material or component whether environmental, such as biological attack, ultraviolet degradation, freezes thaw, etc. or structural defects, such as cracks, movement, or distortion.
- D. No smoking is allowed by personnel performing work in or about the historic structure.
- E. Owner's approval is required for any change, addition or removal of historic structural fabric or historic property.
- F. Ensure that supervisory personnel are on-site and on duty when historic preservation treatment work begins and during its progress.
- G. Do not change sources or brands of materials during the course of the work.
- H. Utility and Communications Services:
 - 1. Notify the Owner, Architect, Engineer, and authorities having jurisdiction, owning or controlling wires, conduits, pipes, and other services affected by the work before commencing operations.
 - 2. It is the responsibility of the contractor to relocate electrical wires and conduit, if required for the work of this project.
 - 3. It is the responsibility of the owner to relocate communication and computer wires, if required for the work of this project.
 - 4. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for the work of this project.
 - 5. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.
- I. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect, Engineer and Owner immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.

1. Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

1.14 GENERAL HISTORIC TREATMENT

- A. The principal aim of any work must be to halt the process of deterioration and stabilize the item's condition. Repair is a second option which becomes necessary only where preservation is not sufficient to ensure mid- to long-term survival. Repair should always be based on the fundamental principal of 'minimal disturbance'. Follow the procedures approved in the historic preservation treatment program.
 1. Retain of as much existing material as possible; repairing and consolidating rather than replacing.
 2. Use additional material or structure to reinforce, strengthen, prop, tie, and/or support existing material or structure.
 3. Use reversible processes wherever possible.
 4. Use of traditional materials and historically accurate repair and replacement techniques. New work should be distinguishable to the trained eye, on close inspection, from the old.
- B. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs. Comply with requirements in Division 01 Section "Photographic Documentation."
- C. Ensure that supervisory personnel are present when historic preservation treatment work begins and during its progress.
- D. Notify Architect, Engineer, and Owner of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.
 1. Do not proceed with the work in question until directed by Engineer of Record.
- E. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of the Owner, Architect, and Engineer.
- F. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.
- G. New or replacement materials/features will be permanently marked in an unobtrusive manner to distinguish them from the original fabric. The manner of identification and location of these marks shall be recorded in permanent building records.

PART 2 - PRODUCTS

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

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
 - 1. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
 - 2. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- B. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.

- b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Examine walls, floors, and roofs for suitable conditions where products are to be installed.
 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Engineer according to requirements in Division 01 Section "Project Management and Coordination."

3.3 HISTORIC REMOVAL AND DISMANTLING

- A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Removal and Dismantling Equipment: Use only hand-held tools pre-approved by the Architect and Engineer before work begins and on a case-by-case basis.
- C. Perform work in accordance with the historic treatment program and approved mockup(s).
 1. Provide supports or reinforcement for existing construction that becomes temporarily weakened by the work, until the work is completed.
 2. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.

3. Do not operate air compressors inside building, unless approved by Engineer in each case.
 4. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Engineer's written approval for each location before such work is begun.
- D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- E. Removing and Dismantling Items On or Near Historic Surfaces:
1. Use only dismantling tools and procedures within 12 inches (300 mm) of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
 2. Unfasten items to be removed, in the opposite order from which they were installed.
 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
 4. Dismantle anchorages.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels or may damage existing historic materials.
- F. Templates: Obtain and distribute to the parties involved in templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect and Engineer.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Utilize containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls" and Division 01 Section "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

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

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION 01 35 91

SECTION 01 40 00 QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

- F. **Product Testing:** Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. **Source Quality-Control Testing:** Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. **Field Quality-Control Testing:** Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. **Testing Agency:** An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. **Installer/Applicator/Erector:** Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. **Experienced:** When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. **General:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

- A. **Qualification Data:** For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.
- J. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.

- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Contractor shall maintain at the job office a record of all required tests that have been performed, clearly indicating the scope of work inspected and the date of approval or rejection.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Final Acceptance, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 2. Comply with the Contract Document requirements for Section 01 73 29 - Cutting and Patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 40 13 – Table 5.15 STATEMENT OF SPECIAL INSPECTIONS

Project: USCA Pickens Salley House Renovation

Project Number: H29-I336

MATERIAL	TYPE OF INSPECTION	SPECIFICATION REFERENCE	INSPECTION BY:
Concrete	Rebar Placement (Periodic)	03200, par. 3.01	
	Verify Use of Design Mix (Periodic)	03300, par. 1.05, 3.07	
	Sample Slump, Air, Temperature (Cont)	03300, par. 3.07	
	Concrete Placement (Cont)	03300, par. 3.04	
	Curing (Periodic)	03300, par. 3.06	
	Verification of In-Situ Strength (Periodic)	03300, par. 3.07	
Masonry	Periodic Verification:		
	a) Site mixed mortar	04810, par. 2.04	
	b) Mortar joint placement	04810, par. 3.04	
	c) Mortar joint construction	04810, par. 3.04, 3.05	
	d) Rebar location	04810, par. 3.08, 3.05, 3.10	
	e) Rebar placement	04810, par. 3.08, 3.09, 3.10	
	f) Clean grout space	04810, par. 3.06	
	g) Site mixed grout	04810, par. 2.04	
	h) Size & location of structural elements	04810, par. 3.12, 3.13	
	i) Type & location of anchors	04810, par. 3.07, 3.10, 3.09	
	j) Size & type of reinforcing	04810, par. 3.07, 3.08, 3.09	
	k) Cold/hot weather protection	04810, par. 1.08	

MATERIAL	TYPE OF INSPECTION	SPECIFICATION REFERENCE	INSPECTION BY:
	l) Welding of rebar (Continuous)	04810, par. 3.13	
	m) Verification of grout placement (Continuous)	04810, par. 3.13	
	n) Preparation of grout & mortar specimens (Continuous)	04810, par. 3.18	
	o) Compliance with inspections & submittals (Periodic)	04810, par. 1.03, 3.01	
Structural Steel	Verifications of High-Strength Bolts/ Washers (Periodic)	05120, par. 2.01	
	Inspection of High-Strength Bolt-ing (Periodic)	05120, PAR. 3.04	
	Verification of Structural Steel Materials	05120, par. 2.01	
	Verification of Weld Filler Materi-als	05120, par. 2.01	
	Inspection of Structural Steel Welding:		
	a) Complete & penetration groove (Continuous)	05120, par. 3.04	
	b) Multi-pass fillet welds (Con-tinuous)	05120, par. 3.04	
	c) Single-pass fillet welds > 5/16" (Continuous)	05120, par. 3.04	
	d) Single-pass fillet welds <5/16" (Periodic)	05120, par. 3.04	
Steel Joists	Periodic Inspections of Steel Frame Joists	05120, par. 2.02	
	Inspection of Field Welds and Bolts (Periodic)	05120, par. 3.04	
Steel Deck	Inspection of Roof Deck (Peri-odic)	05310, par. 3.02	
Fireproofing	Sprayed-on Fireproofing	07815, par.	
	Intumescent Fireproofing	07816, par. 3.04	

Suspended Ceiling Systems	Review Submittal	09511, par. 1.03	
MATERIAL	TYPE OF INSPECTION	SPECIFICATION REFERENCE	INSPECTION BY:
	Inspection of Installation and Anchorage of Suspension System (Per)	09511, par. 3.04	
Mechanical Comp	Gas Piping Systems Installation to Laboratories (Periodic)	15072, par. 1.05	
Electrical Comp	Manufacturer's Certification on Transformers	16272, par. 1.03	
	Manufacturer Certification Required on Mechanical Equipment	15072, par. 1.05	
	Inspection of Label & Anchorage of Mechanical Equipment	15072, par. 3.01	
	Inspection of Label & Anchorage of Electrical Equipment	16010, par. 1.03	
	Seismic Isolators, Review of Submittal	15072, par. 1.05	
	Seismic Isolators Field Inspection of Installation	15072, par. 1.05	

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Contractor shall be responsible for all temporary utilities and their connection. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's designated representatives Architect, testing agencies, and authorities having jurisdiction.

1.4 SUBMITTALS

- A. Site Plan: After coordination with Owner, show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Post City of Aiken business licences for each Contractor and Sub-Contractor in project site office.

1.6 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Pavement: Comply with pavement Sections.

2.2 TEMPORARY FACILITIES

- A. Field Offices: The Contractor shall provide and maintain a temporary field office with telephone with an answering service, dedicated fax, high speed internet, heat and air conditioning. The office shall be weather-tight with lighting, electrical outlets, bottled drinking water with disposal cups, plan desk, plan file rack, file cabinet, and adequate stools and chairs. The office shall be large enough for his use and for use as a coordination office to include meeting space with table and chairs for sixteen (16) people. Portable toilet facilities must be provided on site. The office location must be approved by the Owner prior to erection.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- C. Portable chemical toilets shall be provided by the Contractor as required by local authority having jurisdiction. The Owner's toilet facilities shall not be used at any time during the project.

2.3 EQUIPMENT

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

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Coordinate location of facilities with Owner so they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Electric Power Service: Provide temporary electrical power for construction.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel.
 1. Provide additional telephone lines for the following:
 - a. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
 2. At each telephone, post a list of important telephone numbers including police and fire departments Contractor's home office Architect's office Owner's office Principal subcontractors' field and home offices.
 3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
- J. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail in field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
 2. Maintain support facilities until near Final Acceptance. Remove before Final Acceptance. Personnel remaining after Final Acceptance will be permitted to use permanent facilities, under conditions acceptable to Owner.
- C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- D. Parking: Use Owner designated areas for construction personnel.
- E. Project Identification and Temporary Signs: Provide Project identification and other signs after coordination with Owner. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
 1. Provide temporary, directional signs for construction personnel and visitors.
 2. Maintain and touchup signs so they are legible at all times.
 3. The sign shall be 4' 0" wide x 6' 0" high. The background shall be off-white with red and black letters. Top of sign shall be 9' 0" above finish grade. Sign to be mounted on two 4" x 4" posts with two 2" x 4" diagonal braces to grade. Sign location to be chosen by Architect. Sign to be painted by a professional sign painter and erected within two

(2) weeks of start of construction. Image shall be on both sides of sign for a total of two (2) signs.

- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
- G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- H. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- E. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Final Acceptance. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- F. Site Enclosure Fence: Before construction operations begin, and after coordination with owner, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As indicated on Drawings.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with two sets of keys.

- G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Smoking only in designated areas in accordance with Division 01 Section “Work Restrictions”
 - 2. Supervise all combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Final Acceptance.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Final Acceptance. Complete or, if necessary, restore permanent construction that may have

been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

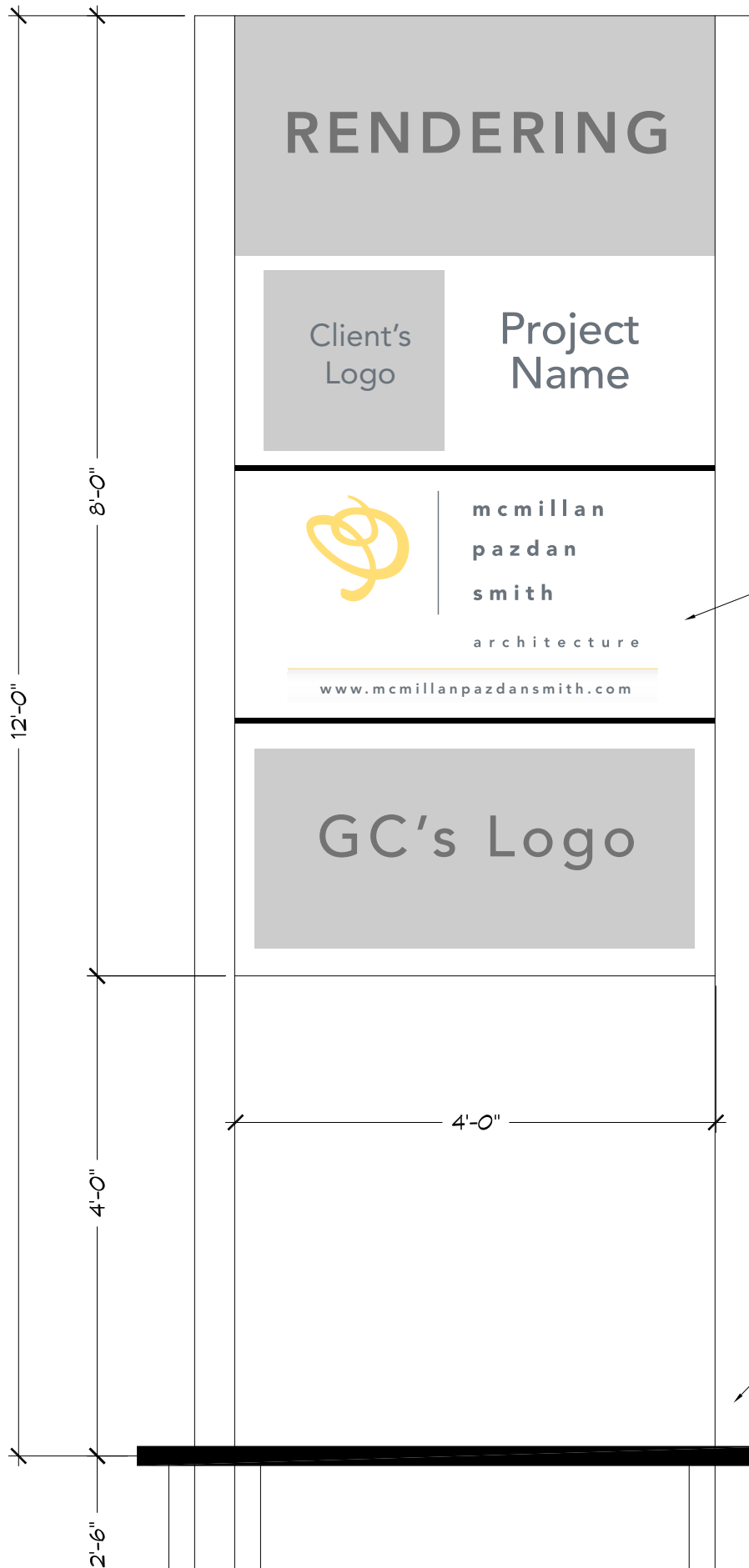
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Final Acceptance, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements

3.6 PROTECTION OF WORK PROPERTY AND THE PUBLIC

- A. Contractors shall ensure that neighboring streets, parking lots, and Owner provided staging areas are protected from mud, sand, stone, litter, or debris in any form. All mud collected on vehicle wheels shall be cleaned off before leaving the construction area. Should any mud or debris from the project collect on the streets, it shall be removed immediately to prevent any hazards to vehicular or pedestrian traffic, as well as from entering the storm sewer. The Contractor is prohibited from discharging any waste products from concrete trucks or from concrete coring work or any other unsuitable construction materials or products into the storm sewer system. The Contractor shall have the cost of the clean up of any such unauthorized discharge deducted from the Contractor's application for payment. All streets, parking lots, or Owner provided staging areas adjacent to the project site shall be cleaned of construction related debris, dust, and mud daily. Should the Contractor fail to comply with this requirement, the Owner reserves the right, with 24-hour prior notice to the Contractor, to clean the adjacent streets, parking lots, or Owner provided staging area. In such case, the cost of the cleaning shall be deducted from the Contractor's application for payment.

END OF SECTION 01 50 00

McMillan Pazdan Smith Construction Job Sign



ALL GRAPHICS TO BE PLACED ON BOTH SIDES OF THE SIGN

PAINTED PRESSURE TREATED 4X4'S SET IN CONCRETE TO EXTEND ENTIRE LENGTH OF SIGNAGE

SECTION 01 60 00 PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for
 - 1. Selection of products for use in Project
 - 2. Product delivery, storage, and handling
 - 3. Manufacturers' standard warranties on products
 - 4. Special warranties
 - 5. Product substitutions
 - 6. Comparable products.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.
- D. Through out the specifications, where the titles below introduce lists of products or manufacturers, the following requirements apply to the product and manufacturer selection. When it is desired to use a product or manufacturer other than one that is listed, submit a properly completed Request for Substitute Form for the desired product.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified or approved equal.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified or approved equal.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified or approved equal.
5. The listing of less than 3 entities does not restrict the use of the 3 listed. Submittal of alternates that are equal in all respects to those listed is encouraged.

1.3 SUBMITTALS

- A. Substitution Requests: Submit one copy of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.

- k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
- C. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- a. Form of Approval: As specified in Section 01 33 00 - Submittal Procedures.
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- B. No asbestos containing materials will be accepted in any new work on the project. Any material specified that does in fact have asbestos shall be called to the Designer's attention ten (10) calendar days prior to the bid date in order that a substitute material may be selected and all contractor's advised by addendum. Materials discovered after this dead line will be the responsibility of the Contractor to furnish an equivalent material approved by the Designer at no additional cost.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions. As a minimum, store materials and components in a clean dry location away from uncured masonry or concrete. Cover components with waterproof paper, tarpaulin or polyethylene sheeting in a manner to permit circulation of air.
1. Stack materials and components in a manner that will prevent bending and avoid significant or permanent damage.
 2. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. and that each order is complete with proper materials. Note and record back orders back orders and partial shipments.
 3. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 4. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 5. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
 6. Store insulation and roofing materials under canvas tarpaulins. Plastic sheet cover is prohibited for these materials.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

D. Out Of Stock Items: Neither the Owner or the Architect will be responsible for the Contractor's failure to allow for adequate lead times to ensure delivery of products, materials, or equipment to prevent installation delays to any and all trades. The Contractor shall be responsible for all ordering, shipping, handling, storage, duty, fee, etc. costs applicable to ordering products, materials, and equipment for on-time installation. Furthermore, if products, materials, or equipment are discontinued or are no longer available at the time they are ordered, the Contractor shall be responsible for all costs incurred by the Architect and the Owner in selecting and approving a substitute and for the cost differential between the originally specified product, material, or equipment and the selected substitute. The Owner and Architect reserve the right to select and approve all substitutes.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to specification sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 77 00 - Closeout Procedures.

PART 2 - PRODUCTS

2.1 SUBSTITUTION PROCEDURES

- A. In making application for substitution, Contractor represents that he has personally investigated the proposed product, and determined that it is equal or superior in all respects to that specified by placing his proper stamp, date, item being substituted for, referenced section of project and drawing sheets applicable and signature on each proposed item. Contractor will further certify that approval of the substitution will not result in any additional cost or time to the owner as a result of coordination of the substituted product with any other trades.
1. Prebid Approvals: Manufacturers, products, and systems listed in the specifications are intended to indicate expected performance, function, design, finish, dimensions, etc. and not to limit competition. Whether one or more entities are listed in the specifications, equal manufacturers, products, and systems by other manufacturers to that specified may be submitted for review. These submittals must be received by the Architect prior to the date established in the Bidding Documents. Each Contractor shall obtain approval by addendum from the Designer for use of substitute products, materials, or equipment claimed as equal to those specified. This request for approvals shall be as follows:
- a. Applications shall be made by the Contractor and not by subcontractors or material suppliers.
 - b. Application shall be in the Designer's office no later than ten (10) days prior to the bid opening.
 - c. Each item on the list of request for substitutions of material shall be accompanied by sufficient printed information and/or samples to allow for a fair comparison between the proposed material and material specified.
- B. The Designer will issue an addendum no less than seven (7) days prior to the bid date listing approved substituted products that may be used in the bid process. No further substitutions will be permitted except in unusual or extenuating circumstances.

2.2 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
- 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. **Product:** Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. **Manufacturer/Source:** Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. **Products:** Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. **Manufacturers:** Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. **Available Products:** Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements.
6. **Available Manufacturers:** Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements.
7. **Product Options:** Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. **Visual Matching Specification:** Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
9. **Visual Selection Specification:** Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. **Standard Range:** Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. **Full Range:** Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:

1. No available domestic product complies with the Contract Documents.

2. Domestic products that comply with the Contract Documents are available only at prices or terms substantially higher than foreign products that comply with the Contract Documents.
- D. The Contractor shall fully comply with all provisions of the Contract Documents including providing such entities that include, but are not limited to, the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect and OSE, notification of not being able to meet any of the provisions of the Contract Documents will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.
- E. Electrical Provisions: Where electrical components or equipment are specified or are required, provide all transformers, power supplies, switches, controllers, relays, wire, conduit, circuit breakers, junction boxes, transfers, and other electrical devices, components, and materials as required and provided by the specified or required electrical equipment or component manufacturer for a complete and operable system meeting and complying with the specified or required electrical equipment or component manufacturer's warranty requirements. Where such items are not available from the specified or required electrical equipment or component manufacturer, provide such items as recommended by the specified or required electrical equipment or component manufacturer to provide a complete and operable system meeting and complying with the specified or required electrical equipment or component manufacturer's warranty requirements.

PART 3 - EXECUTION (Not Used)

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Where specifications requirements are more stringent or severe than the manufacturer's requirements, comply with the specifications unless the manufacturer states, in writing, that the specification requirements are detrimental to performance and will void the manufacturer's warranty. Anchor each product securely in place, accurately located and aligned with other Work.
1. All Work is to be performed by and all materials are to be installed by craftsmen that are skilled, trained and experienced in their respective trades.
 2. All Work is to be performed to and all materials are to be installed to the highest level of quality and workmanship that meets or exceeds manufacture's instructions and industry standards and shall meet the quality and performance requirements of the Architect. Work not conforming to this requirement shall be removed and replace with conforming work.
 3. Where specific manufacturers and product names are not listed, provide materials and products that are the best types and that are best suited for the intended use as indicated in the Contract Documents, and that will provide the maximum longevity with minimum maintenance. Where more than one product can be used in an application, the best product shall be selected and used. Work not conforming to this requirement shall be removed and replace with conforming work.

4. All products and materials shall be installed using the best procedures, techniques and practices recommended or suggested by the respective manufacturers and industry standards. Provide all supplementary materials and products recommended or suggested by the applicable manufactures and industry standards even if the supplementary materials and products are not indicated or specified. Work not conforming to this requirement shall be removed and replace with conforming work.
 5. Bring all conflicts within the drawings, within the specifications, and between the drawings and specifications to the Architect's attention. Where such conflicts that were not brought to the Architect's arise, the Architect will interpret and judge for the best interest of the Owner even if the interpretation or judgment is the most expensive or complex of the conflicting issues.
 6. Before, during, and after their installation, and until substantial completion, continuously protect all materials, finishes, equipment, assemblies, and subassemblies from weather, deterioration, premature wear, damage, theft, or vandalism.
 7. When installing items, including but not limited to materials, components, assemblies, subassemblies, and systems, ensure that all supports, substrates, and surfaces to receive installed items meet the manufacturer's requirements, and are in a suitable condition, to receive the installed items. Beginning installation shall be inferred as acceptance of existing conditions and that the installer accepts full responsibility for the performance and aesthetics of the completed Work.
 - a. This evaluation includes, but is not limited to, conducting applicable testing to determine the presence and effects of moisture; the soundness, strength, and integrity of substrates so as to prevent separation or delamination, sag, or excess deflection; the compatibility of adjoining, connecting, or contacting materials; proper support of elements and members to prevent sag or excessive deflection. Where bracing or supports are not specifically shown on the Drawings, but are required to achieve, aesthetics, structural requirements, support, etc, applicable members shall be provided and installed.
 8. Where materials, components, assemblies, subassemblies, and systems, co-exist with or are dependent on the proper performance of other materials, components, assemblies, subassemblies, and systems, ensure that all necessary measures are taken to preserve that synergistic relationship.
 9. Clean exposed surfaces to a like-new condition, to the satisfaction of the Architect, and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Fasteners: Unless specified or required otherwise, comply with the following:
1. Use fasteners of the proper type, design, size, and length as recommended by the manufacturers of the components or material being fastened for the intended application.
 2. Fasteners shall provide proper and secure attachment without damaging the components or materials being fastened or the substrate.
 3. Install fasteners in a pattern and density recommended by the applicable manufacturers, referenced agencies, and governing authorities to ensure suitable fastening to meet conditions. Where there is a conflict in recommended fastening, the most severe shall govern.

4. Fasteners that are used in exterior applications, are exposed to weather or moisture, or are in contact with earth, interior and exterior treated wood, interior and exterior cementitious materials, or dissimilar materials shall be corrosion-proof.
5. Use fasteners that will not penetrate surfaces that will be exposed to view or that will be finished.
6. Where fasteners must completely penetrate the substrate to which materials or components are being attached, fasteners shall be of the recommended length so as not to penetrate completely through the substrate more than 3/4 inch, unless the manufacturer recommends otherwise. In no case shall fasteners extend past the bottom of the metal roof deck flutes.
7. After being tightened to the recommended torque, bolts shall be of proper length to penetrate items being fastened and have sufficient thread exposed to accept a flat washer, lock washer and a nut with 3/8 inch of bolt extending past the nut.

C. Control, Expansion, and Contraction Provisions

1. If provisions for control, expansion, and contraction in materials and systems are indicated on the Drawings or described in the specifications, these provisions shall be installed. If provisions for control, expansion, and contraction in materials and systems, such as concrete, plaster, masonry, EIFS, drywall, flooring materials, roof systems, and metal are not provided on the Drawings or in the specifications, notify the Architect during the Bidding Phase for an evaluation, clarification, and determination. If applicable, the Architect will provide drawings or specifications or both to address the situation. If the Architect is not notified during the Bidding Phase that there are no provisions for control, expansion, and contraction on the Drawings or in the Specifications, and it is later determined that these provisions are required, then the contractor shall provide the required Control, Expansion, and Contraction provisions at no adjustment to the Contract Price or Time. As a minimum, material and system manufacturer's requirements and instructions for control, expansion, and contraction shall be followed.

3.2 MOISTURE CONTROL

- A. The intent of these specifications is not to state, suggest, or imply that the Architect is a moisture or mold specialist or expert. Instead, the specifications are the minimum directives to the Contractor regarding the handling and installation of materials. Furthermore, these specifications do not relieve the Contractor of any additional or other responsibilities, duties, or procedures, including hiring and paying for applicable specialists or consultants, necessary to ensure that the building is free of mold and or any other conditions that may promote mold or may be interpreted as detrimental to any form of Indoor Air Quality. The Contractor shall be responsible for all coincidental damage related to moisture intrusion or moisture accumulation related to the Contractor's failure to take the necessary precautions and preventive measure to prevent moisture intrusion and accumulation.
- B. Fibrous and cellulose-base materials and products that become wet and are not dried within 24 hours can and usually do initiate and promote the growth of mold and mildew. Saturation of these materials is not necessary to initiate the mold cycle. Preventing and detecting the spread

of mold, mildew, other fungi, and their related spores is of paramount importance during construction of this Project and after Owner occupancy. The Contractor shall be ever mindful of how the procedures used to handle, stage, and install materials and products will impact and affect the growth of mold and mildew during construction and after Owner occupancy.

1. Building materials and products that are prone to absorbing and retaining moisture include, but are not limited to, the following:
 - a. Carpet
 - b. Drapery
 - c. Drywall
 - d. Masonry
 - e. Concrete
 - f. Furniture
 - g. Insulation
 - h. Casework,
 - i. Fiberboard
 - j. Wood floor
 - k. Wood doors
 - l. Fabric items
 - m. Particleboard
 - n. Finish carpentry
 - o. Acoustical ceiling
 - p. Wood finishes and trim
 - q. Cellulose, fibrous, or moisture absorbing materials and products
 - r. Any material or product that may promote, encourage, or sustain mold or mildew growth or the spores of same.

- C. At the time of Contract Execution, submit the following:
 1. A signed Moisture Control Certification, which is located in front of this Project Manual.
 2. Complete and detailed procedures that describe the following conditions:
 - a. Manufacturer's certification for any listed materials or products that are normally used in the building shell and for which the manufacturer claims that moisture will not harm the material or product will not promote or support the growth of mold or mildew.
 - b. Identification of moisture and mold on or in any of the listed materials and products, whether being unloaded, staged, or in-place.
 - c. Protection of any of the listed materials and products during staging, handling, and while in place.
 - d. Disposition of materials and products that are wet, show signs of having been wet, or have evidence of mold or mildew on arrive at the site or off-site staging/storage location.
 - d. Removal of materials or products that have been identified as being wet or having signs of mold or mildew.
- D. Methods to prevent mold, mildew, other fungi, and their related spores include, but are not limited to, the following:

1. Comply with the provisions for “Temporary Use Of Owner’s HVAC” as stipulated in Section 01500 of the Specifications.
2. Establish and enforce proper and effective construction sequencing throughout the project to protect moisture sensitive products and materials from contamination.
3. Monitor interior humidity levels and provide proper ventilation during construction to promote drying and curing of concrete, masonry, fireproofing, drywall, etc. and to prevent mold/mildew formation. This is especially critical during humid or wet weather conditions.
4. Take necessary precautions for moisture conditions/surfaces that may be concealed after constructions.
5. Immediately dry leaks, spills, or other moisture that has entered the structure or building shell and monitor and regulate, as necessary, water generating activities to prevent mold/mildew contamination.
6. Be constantly alert for any signs of mold, mildew, and musty odors and take prompt remedial and preventative action at their first sign. Encapsulation is not an acceptable treatment.
7. Erect the exterior finish (masonry, siding, EIFS, etc.) of the building shell as quickly as possible to protect internal components (sheathing, insulation, blocking, etc.) of building shell. Protect these components until the exterior finish is installed.
8. Use all possible means and methods to prevent moisture intrusion into the structure after any of the listed materials or products have been installed.
9. Any listed material or product that arrives on the job site wet or shows evidence of having been wet shall be considered defective, shall be rejected, and promptly removed from the site.
10. Keep the listed materials and products from direct contact with moisture. Use all necessary means to keep materials dry during staging and after installation. Take all measures to close openings in the building shell after installation of building materials and products. Promptly remove from the site all materials and products that have become wet and have an unacceptable moisture level or that may produce or encourage the growth of mold as determined by an independent testing laboratory that is acceptable to the Owner and Contractor.
11. When materials and products are wrapped, and moisture has condensed on the inside of the wrapping, the materials that are wrapped shall be tested by the independent testing agency. If the agency determines that the materials are wet, those materials shall be removed from the site promptly at the contractor’s expense.

12. Do not install any of the listed materials and products until they are completely protected from direct contact with moisture or water.
13. Promptly remove from the site all materials and products, including porous products such as masonry, that show signs of mold, mildew, and musty odors even if already installed. Procedures to only clean surfaces to remove the mold, mildew, and musty odors are not acceptable.
14. Take all measures to prevent scrap and waste materials from being covered or buried in the construction.
15. Prevent moisture accumulation and promote drying by providing air circulation and temperature control during installation of systems that dissipate moisture such as plaster, sprayed fireproofing, concrete, drywall finishing, etc. Refer to Section 01500 for procedures regarding temporary use of the Owner's HVAC system.
16. None of the listed materials or products shall be installed until the building is completely in the dry, and not prior to completing moisture producing operations (concreting, plastering, plastering, sprayed fireproofing, etc. Any of these materials or products that are installed prior to the building being in the dry or completing moisture producing operations shall be promptly removed from the site and replaced with new materials at the contractor's expense.
17. Coordinate construction activities to ensure that the listed materials and products are not exposed to moisture or to conditions that will initiate, promote, or encourage the growth of mold or mildew or that will otherwise be detrimental to the materials and products. Where a manufacturer's requirements for ambient conditions (such as the HVAC operational and temperature and humidity stabilized at expected operating levels) exceed these requirements, the most stringent shall govern.
18. Keep all HVAC duct covered and sealed when the system is not operating to prevent dust from entering system. Keep air-conditioning ducts free of moisture and condensation pans and lines operational and unclogged. Ensure that other water sources are not draining into condensation pans.
 - a. Keep HVAC filters and ducts clean during construction. (Use pleated filters).
 - b. Do not operate HVAC when dusty (sawing, sweeping, sanding, etc.) operations are being performed.
 - c. Use air filtration devices (dust collectors) on sanding and sawing equipment.
 - d. Use freestanding air filtration devices.
 - e. Do not operate HVAC when doors and windows are open.
19. Do not conduct any dust-producing activities when the HVAC system is operating. Secure the system and seal all duct openings prior to performing any dust-producing operations.

- 20 Prior to Substantial Completion, contract with an independent licensed and professional testing agency that specializes in indoor air quality and that is acceptable to the Owner and Architect. The Contractor shall take all recommended and required corrective action to bring all unacceptable areas to an acceptable level, as determined by additional air sampling, at no additional cost to the Owner. This testing agency shall be responsible for, but not limited to the following:
- a. Sampling air of all spaces and analyzing for mold and mold spores.
 - b. Sending copies of all reports to the Owner, the Architect, and the Contractor. Show actual levels of each space tested and denote all areas that are not within acceptable limits.
 - c. Submitting recommendations to bring unacceptable areas to acceptable levels.
 - d. Acceptable levels/conditions shall be determined by comparing samples of indoor air with samples of background and outside air. The mold content of indoor air samples shall not exceed that of the background and outdoor air samples. Additionally, the indoor air samples shall not contain any traces of mold that would not ordinarily be found in the outside air.

END OF SECTION 01 60 00

SECTION 01 73 00 EXECUTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.

1.2 SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- C. Certified Surveys: Submit two copies signed by land surveyor or professional engineer.
- D. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.

- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

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

- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit

to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Recording: At Final Acceptance, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

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

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

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials

specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Final Acceptance.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Final Acceptance.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Section 01 40 00 - Quality Requirements.

3.8 PROTECTION OF INSTALLED CONSTRUCTION

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

3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section – 01 73 29 Cutting and Patching.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair. Damaged surfaces that cannot be repaired to the Architects satisfaction shall be replaced with new material at no additional cost.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 73 29 CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Procedural requirements for cutting and patching.

1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 3. Products: List products to be used and firms or entities that will perform the Work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational assemblies and equipment.
 2. Air and smoke barriers.
 3. Fire suppression systems.

4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Communications systems.
 7. Conveying equipment.
 8. Electrical wiring.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
1. Water, moisture, or vapor retarder.
 2. Membranes and flashings.
 3. Exterior curtainwall construction.
 4. Equipment supports.
 5. Piping, ductwork, vessels, and equipment.
 6. Noise and vibration control elements and assemblies.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

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

END OF SECTION 01 73 29

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Sections include the following:
 - 1. Division 01 Section "Environmental Requirements" for environmental protection measures during construction.
 - 2. Division 01 Section "Execution" for progress cleaning requirements.
 - 3. Division 04 Section "Unit Masonry" for disposal requirements for masonry and stone waste.
 - 4. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of minimum 75 percent by weight of total waste generated by the Work.

- B. Salvage/Recycle Requirements: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible including the following materials:

- 1. Demolition Waste:

- a. Asphaltic concrete paving.
- b. Concrete and reinforcing steel.

- 2. Construction Waste:

- a. Site-clearing waste.
- b. Masonry and CMU.
- c. Lumber, wood sheet materials and trim.
- d. Metals.
- e. Roofing.
- f. Insulation.
- g. Carpet and pad.
- h. Gypsum board.
- i. Piping.
- j. Electrical conduit.
- k. Paper, cardboard and boxes.
- l. Plastic sheet and film.
- m. Polystyrene packaging.
- n. Wood crates.
- o. Plastic pails.

1.5 SUBMITTALS

- A. Waste Management Plan: Submit 3 copies of plan within 7 days of date established for the Notice to Proceed.

- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit 3 copies of report. Provide separate reports for demolition and construction waste. Include the following information:

- 1. Material category.
- 2. Generation point of waste.
- 3. Total quantity of waste in tons.
- 4. Quantity of waste salvaged, both estimated and actual in tons.

5. Quantity of waste recycled, both estimated and actual in tons.
 6. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit 3 copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- H. LEED Submittal: Complete LEED credit template for MR_c2, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- I. Qualification Data: For Waste Management Coordinator and refrigerant recovery technician.
- J. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that refrigerant was recovered compliant with EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: LEED Accredited Professional. Waste management coordinator may also serve as Contractor's LEED coordinator.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management & Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.

2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
- D. Forms: Use form to match that required in LEED credit template.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan approved by Architect. Provide handling, containers, storage, signage, transportation, and other items required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures appropriate for the Work occurring at Project site.
 - 1. Distribute waste management plan to everyone concerned within 3 days of submittal return.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with Division 01 Section "Environmental Requirements" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.3 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Grind asphalt to maximum 1-1/2-inch size.
 1. Crush asphaltic concrete paving and screen to comply with requirements in Division 31 Section "Earth Moving" for use as general fill.
- B. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 1. Pulverize concrete to maximum 1-1/2-inch size.
 2. Crush concrete and screen to comply with requirements in Division 31 Section "Earth Moving" for use as satisfactory soil for fill or subbase.

3.4 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Site-Clearing Wastes: Chip brush, branches, and trees on-site.
 1. Comply with requirements in Division 32 Section "Plants" for use of chipped organic waste as organic mulch.
- C. Wood Materials:
 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

- a. Comply with requirements in Division 32 Section "Plants." for use of clean sawdust as organic mulch.
- D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.
 - a. Comply with requirements in Division 32 Section "Plants." for use of clean ground gypsum board as inorganic soil amendment.
- 3.5 DISPOSAL OF WASTE
- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in an EPA approved landfill acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Collect waste from construction areas and elsewhere daily.
 3. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 4. Comply with requirements of authorities having jurisdiction and NFPA 241 for removal of combustible waste material and debris.
 5. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F.
 6. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials and dispose of at designated spoil areas on Owner's property.
- D. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19

SECTION 01 77 00 CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for contract closeout, including, but not limited to:
1. Inspection procedures.
 2. Warranties.
 3. Final cleaning.

1.2 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Final Completion, complete the following. List items below that are incomplete in request.
1. Submit final Application for Payment.
 2. 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.
 3. Advise Owner of pending insurance changeover requirements.
 4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 5. 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.
 6. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, 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.
 9. Complete startup testing of systems.
 10. Submit test/adjust/balance records.
 11. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 12. Advise Owner of changeover in heat and other utilities.
 13. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 14. Complete final cleaning requirements, including touchup painting.
 15. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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

1.3 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 a certified copy of Certificate of Completion and Certificate of Compliance Inspection.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report and warranty.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 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. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

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

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Final Inspection for entire Project or for a portion of Project:

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

- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 78 23 OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for preparing operation and maintenance manuals, including:
 - 1. Emergency manuals.
 - 2. Operation manuals for systems, subsystems, and equipment.
 - 3. Maintenance manuals for the care and maintenance of products, materials, finishes, systems and equipment.

1.2 SUBMITTALS

- A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 2 copies of each corrected manual within 10 days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Coordinate maintenance and operation training materials with Owner.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- C. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.

- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 - 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for fire flood gas leak water leak power failure water outage equipment failure and chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

- D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.
 - 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

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

2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
- D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions that detail essential maintenance procedures:
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. Comply with Section 01 77 00 - Closeout Procedures for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 36 - WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties:
 - 1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for procedures for submitting warranties.
 - 2. Division 01 Section "Closeout Procedures" for Project closeout.
 - 3. Divisions 02 through 33 for Sections for specific content requirements for warranties and special warranties on products and installations specified to be warranted.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
 - 1. Warranties shall begin on the date of substantial completion. If the manufacturer's or provider's warranty begins on the date of shipment or delivery or some other date that precedes the Date of Substantial Completion, provide a gap warranty to extend the warranty period by such a time to ensure that the Owner receives the full warranty period specified in the Contract Document beginning with the Date of Substantial Completion.
 - 2. Warranties shall be written to cover the Owner and shall name the Project location. Warranties written for the benefit of only the original purchaser are not acceptable.
 - 3. Warranties that require the Owner's signature to become affective are not acceptable and will be rejected.

1.3 DEFINITIONS

- A. Standard warranties: Preprinted written warranties published by individual manufacturers for particular products and specifically endorsed by the manufacturer to the Owner.

- B. Special warranties: Warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to comply with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
 - 1. Warranties shall have provisions to cover the costs for labor, materials, fees, taxes, shipping, handling, equipment and other incidental costs associate with restoring Work to an acceptable condition.
- D. Warranties and their provisions for material, equipment, components, systems, subsystems, or other entities that are covered by a Warranty or that require a Warranty, shall pass directly to and apply directly to the Party whose name appears as the Owner in Contract Documents.
- E. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies. Written or expressed warranties shall not be in lieu of or void or dilute the Owner's rights provided under the Uniform Commercial Code (UCC).
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- F. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.
- D. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
- E. Form of Submittal: At Final Completion, compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Provide additional copies of each warranty to include in operation and maintenance manuals
- F. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor
 - 4. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty for inclusion in each required manual.
- G. Cutting and Patching: For areas involving cutting and patching, issue a certification, from the manufacturer of the materials and systems being cut and patched stating that all conditions and provisions of existing warranties and insurance will remain in effect. Where cutting and patching materials are by manufacturers other than those of the original manufacturer, provide a certification that the materials will not affect the conditions and provisions of existing warranties and insurance.

USCA Pickens Salley House Renovation
University of South Carolina Aiken
Aiken, South Carolina
OSE No. H29-I336

Project No. 10293.00
October 24, 2011
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PART 2 - PRODUCTS not used

PART 3 - EXECUTION not used

END OF SECTION 01 78 36

SECTION 01 78 39 PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for Project Record Documents, including:
 - 1. Record Drawings.
 - 2. Record Specifications.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set(s) of marked-up Record Prints.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit one set of marked-up Record Prints. Architect will mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return prints for organizing into sets, and final submittal.
 - b. Final Submittal: Submit one set(s) of marked-up Record Prints.
- B. Record Specifications: Submit two copies of Project's Specifications, including addenda and contract modifications.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Final Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect for resolution.
 3. Architect will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
 4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
 - a.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 - 3.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. 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.
- B. Provide two hard copies and copy on CD of complete sets of Designer approved shop drawings and operation and maintenance manuals shall be furnished to the Owner no later than fourteen (14) calendar days prior to final acceptance of the project by the Owner.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.
- C. Final payment will not be made until "As-Built Drawings" are turned over to the Designer and approved in writing by the Designer.

END OF SECTION 01 78 39

SECTION 01 79 00 DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.2 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section – 01 40 00 Quality Requirements, experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site. Review methods and procedures related to demonstration and training.
- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.

- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.
 2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.
 3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.
 4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.
 5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.
 6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.
 7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.
 8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
1. Owner will furnish qualified personal to describe Owner's intended operations.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
1. Schedule training with Owner with at least seven days' advance notice.

- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

END OF SECTION 01 79 00

SECTION 01 81 16 - ENVIRONMENTAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes guidelines pertaining to protection of the environment. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Environmental protections include:
 - 1. Avoiding erosion and sedimentation.
 - 2. Avoiding air pollution.
 - 3. Avoiding water pollution.
 - 4. Avoiding noise pollution.
 - 5. General housekeeping.
- B. DHEC (South Carolina Department of Health and Environmental Control), Architect, Owner, and authority having jurisdiction may inspect periodically during construction.
- C. Related Sections include the following:
 - 1. Division 01 Section "Execution" for developing a schedule of required tests and inspections.
 - 2. Division 01 Section "Tree Protection" for treatment of vegetation to remain.

1.3 DEFINITIONS

- A. Sediment Basin: Basin designed to collect and detain sediment-laden storm water runoff and release, at a slower rate, a much cleaner, better quality water.
- B. Diversion Berm and Ditch: Temporary soil berm or ridge, excavated channel, or a combination berm and channel across sloping land to protect work areas or existing storm drains from upslope runoff and to divert sediment-laden water to sediment basins or traps or stable outlets.
- C. Temporary Sediment Trap: Small, temporary ponding basin formed by an embankment to detain runoff and trap sediment below drainage area of 5 acres or less.
- D. Silt Fence: Temporary sediment barrier constructed of filter fabric, buried at the bottom, stretched and supported by posts.

1. Posts, minimum 10-gauge self-fastener angle steel type, five feet in length.
2. Wire mesh is required unless a synthetic, extra strength filter fabric providing puncture strength of 50 psi in accordance with ASTM D751 is used, and provided a 6'-0" maximum post spacing is used.

1.4 CONTRACTOR RESPONSIBILITY

- A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result.
- B. In addition to the responsibilities and duties described elsewhere in these documents, Contractor shall also be responsible to:
 1. DHEC site environmental permits not already obtained by the Owner,
 2. Arrange and coordinate a DHEC pre-construction meeting,
 3. Comply with provisions in the most current DHEC regulations,
 4. Maintain the site as stipulated in the approved DHEC permit,
 5. Fines and penalties levied by DHEC applicable to site control, water management, dust and noise control, and other applicable pollution issues,
 6. Site inspections and reporting,

1.5 COORDINATION

- A. Schedule Work to expose areas subject to erosion for the shortest possible time.
- B. Preserve natural vegetation beyond construction limits.
- C. Locate temporary storage and construction buildings and route construction traffic to minimize soil disturbance and erosion.

PART 2 - PRODUCTS

2.1 EROSION CONTROL MATTING

- A. Jute matting: Uniform open plain weave pattern of single jute yarn, 48 inches in width, plus or minus 1 inch.
 1. Yarn of a loosely twisted construction and thickness varying no more than one-half its normal diameter.
 2. 78 warp ends, plus or minus 2, per width of the matting; 41 weft ends, plus or minus 1, per linear yard; and weight average 1.22 pounds per linear yard of the matting; tolerance of plus or minus 5 percent.

- B. Excelsior matting: Wood excelsior, 48 inches in width plus or minus 1 inch, minimum thickness of 1/4 inch, and average weight of 1.07 pounds per linear yard, with a tolerance of plus or minus 5 percent, covered on one side with a woven fabric consisting of twisted paper or cotton cord, mesh size between 1 inch by 1 inch, and 1-1/2 inch by 3 inches.
- C. Jute or excelsior matting for erosion control shall not be dyed, bleached, or otherwise treated in a manner that will result in toxicity to vegetation.
- D. Straw blanket: Landlok 407GR, manufactured by Synthetic Industries, Inc. 100 percent agricultural straw, lightweight, photodegradable, polypropylene top and bottom nets. Top and bottom nets weigh 1.64 pounds per 1,000 square feet. Straw fiber weigh 0.5 pound per square yard.
- E. Filter Fabric: Burlap or synthetic. Wire mesh is required unless a synthetic, extra strength filter fabric providing puncture strength of 50 psi in accordance with ASTM D751 is used, and provided a 6'-0" maximum post spacing is used.
 - 1. Burlap, 7.5 oz. weight and a minimum of 32 inches wide.
 - 2. Synthetic fabric, Mirafi 100X manufactured by Celanese Fibers Co., Bidim C34 manufactured by DuPont Co., or equivalent providing puncture strength of 50 psi in accordance with ASTM D751.
 - 3. For silt fencing needed more than 45 days, use synthetic type.

PART 3 - EXECUTION

3.1 SEDIMENT AND EROSION CONTROL

- A. Control measures indicated on the Drawings and Specifications consist of, but are not limited to, construction entrances, sediment basins/ponds/traps, diversion ditches and berms, erosion control matting, filter fabric silt fences, stone check dams, riprap outlet stabilization, inlet protection, and temporary fast-growing vegetation or other suitable groundcover,
 - 1. The Drawings show a workable plan for controlling sediment and erosion during construction. However, they may not show all required sediment and erosion control measures due to Contractors operations, means and methods, and scheduling of the Work.
 - 2. Initiate sediment and erosion control measures prior to the commencement of demolition, clearing, grading, excavation, or other operations that will disturb the site or the natural protection provided by the site.
 - 3. If the prepared plan for controlling sediment and erosion proves ineffective for the above reasons, add to, change, or revise the sediment and erosion control plan, approach, or measures to make them effective, and as directed by the Architect, Owner, DHEC, or City.
 - 4. Costs for additional sediment and erosion control measures shall be considered an incidental obligation of the Contractor and included in the Contract Price. Effective sediment and erosion control will be a condition for recommendation of progress payment applications.

- B. Construction Entrances. Construct a gravel area or pad at points where vehicles enter and leave a construction site. Clear the entrance and exit area of vegetation, roots, and other objectionable material; grade and place gravel to the grade and dimensions shown on the plans. Provide drainage to carry water to a sediment trap or other suitable outlet.
1. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. Remove immediately objectionable materials spilled, washed, or tracked onto public roadways.
- C. Sediment Basins: Inspect sediment basins after each rainfall and remove accumulated sediment. Report unusual or damaging situation in writing to the Architect within 24 hours of the incident.
- D. Diversion Berms and Ditches. Provide sufficient room and diversions to permit machine regrading and cleanout.
1. Inspect temporary diversions once a week and after every rainfall. Remove sediment from the flow area and repair the ridge.
 2. Report unusual or damaging situation in writing to the Architect within 24 hours of the incident.
 3. When the protected area is permanently stabilized, remove the ridge and the channel and blend with the natural and new ground levels.
 4. Provide permanent vegetative cover when construction completed.
- E. Erosion Control Matting and Straw Blankets. Place matting and straw blankets where needed to aid in stabilizing disturbed areas, seeded areas and channels.
1. Before seeding, ensure that ground surface is smooth and free from stones, clods, or debris that will prevent contact of the matting with the soil.
 2. Place matting immediately following seeding.
 3. Provide blankets on seeded slopes, 3 horizontal to 1 vertical and steeper. Install in accordance with the manufacturer's recommendations.
- F. Silt Fence: Construct temporary sediment barriers below small disturbed areas and where shown on the Drawings, to retain sediment by reducing the flow velocity to allow sediment deposition.
1. Remove sediment deposits prior to reaching one-third the height of the fence.
- G. Stone Check Dams: Construct temporary stone dams across drainage-ways draining 2 acres or less where shown on Drawings.
1. Place stone on a synthetic filter fabric foundation.
 2. Inspect check dams and channels for drainage after each runoff event.
 3. Repair erosion and remove sediment at check dams.
 4. Add stone to dams to maintain dimensions shown.
 5. Report unusual or damaging situation in writing to the Architect within 24 hours of the incident.
- H. Temporary Sediment Traps: Clear, grub, and strip the area under the embankment of vegetation, root mat, and top soil. Place select fill for the embankment in 9 inch lifts and machine compact.

Overfill the embankment 6 inches to allow for settlement. Construct riprap spillway over synthetic filter fabric. The spillway shall provide for flow discharge to an undisturbed, stable area.

1. Inspect traps after each rainfall and remove accumulated sediment when the depth exceeds one-half of the design depth.
 2. Maintain the dimensions of the trap shown on the Drawings.
 3. Report unusual or damaging situation in writing to the Architect within 24 hours of the incident.
- I. Outlet Stabilization: Construct permanent riprap channels at the outlet of a lined channel or storm drain pipe where indicated on the Drawings.
1. Excavate and compact the outlet area to the density of the surrounding undisturbed material.
 2. Place filter fabric on the prepared subgrade. Overlap fabric a minimum of one foot.
 3. Construct the riprap apron on a zero-percent slope with top elevation level with adjacent ground.
 4. Seed disturbed areas adjacent to the riprap.
- J. Inlet Protection. Construct temporary sediment barriers around storm drain inlets as shown on the Drawings.
1. Inspect structure after each rainfall and repair if damaged.
 2. Remove sediment when trap reaches one-half capacity.
 3. Report unusual or damaging situation in writing to the Architect within 24 hours of the incident.
- K. Maintenance and Removal: Implement sediment and erosion control devices or measures prior to land-disturbing activity within the drainage area where they are located and in accordance with the construction sequence indicated on the Drawings.
1. Check sediment and erosion control measures periodically and clean or otherwise remove silt build-up to maintain them in proper working order.
 2. Maintain sediment and erosion control measures through final completion of the Work.
- L. Noncompliance. Failure of the Contractor to comply with the preceding requirements may result in the Contractor receiving formal notification by DHEC to initiate such measures. If compliance is not forthcoming within 48 hours of receipt of notification, the Owner may suspend all or portions of the Work pursuant to South Carolina Storm Water Management and Sediment Control Regulations R.72-300.

3.2 AIR POLLUTION

- A. Open Burning: On-Site burning is not permitted.
- B. Dust Control. Control dust throughout the Contract period within the Project area and other areas affected by the construction. This includes, but is not specifically limited to, paved and

unpaved roads, haul roads, access roads, disposal sites, borrow pits, and material and equipment storage sites.

1. Dust control measures may include, but are not limited to, wetting down disturbed earth surfaces or eliminating traffic across them, removing accumulations of dirt from paved areas by hand or mechanical means, and washing streets at the end of the work day.
2. Perform dust control measures when required by the controlling agency for streets and roadways or the Architect.

3.3 WATER POLLUTION

- A. Exercise every reasonable precaution throughout the construction period to prevent pollution of rivers, streams, and water impoundments.
 1. Do not discharge pollutants such as chemicals, fuels, lubricants, asphalt, bitumen, concrete, grout, raw sewage, pesticides, herbicides, or other harmful waste into or alongside a watercourse, impoundment, or channel.

3.4 NOISE POLLUTION

- A. Avoid use of tools and equipment that produce noise above 85 dB at a distance of 25 feet. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.
- B. If noise levels are above acceptable levels, erect sound barriers to control noise or conduct demolition during times that are less disturbing to the Owner or a combination of both.

3.5 GENERAL HOUSEKEEPING

- A. Ensure that vehicles and equipment have functional and operable mufflers and noise control apparatus.
- B. Water down grading and excavation areas, drives and roads, parking areas, and disturbed areas that can produce dust.
 1. Where demolition is a part of the Contract, the same dust and erosion controls apply to structures being demolished. Perform as much demolition on calm days as possible without interfering with or compromising schedules.
- C. Hose down trucks including cargo box, wheels, axels, and chassis to remove dust and debris that may drop during transportation.
- D. Keep vehicle windows clean for visibility.

- E. Cover transport trucks with heavy-duty tarps that completely enclose the cargo box; tie down to prevent flapping, fluttering, or blowing debris. Tarps with holes or rips or that do not fit the cargo box are not acceptable.
 - 1. Ensure that no debris is exposed or extends past the cargo box during transportation.
- F. Clean up trash and debris droppings on public and private property resulting from this Work.
- G. Repair damage to public and private property including buildings, structures, landscaping, roads, and highways that results from this Work.

END OF SECTION 01 81 16

SECTION 02 41 12 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes remove existing construction only to the extent required by renovations and restoration as indicated in including the following:
 1. Demolition and removal of selected portions of a building.
 2. Demolition and removal of selected site elements.
 3. Patching and repairs.
 4. Coordinate all demolition through the Architect.
 5. Salvage of existing items to be reused or recycled
 6. Handling and properly disposing of hazard materials such as asbestos and paint that contains lead.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1 Division 01 Section "Summary of Work" for use of the premises and phasing requirements.
 - 2 Division 01 Section "Project Management and Coordination" for preconstruction photographs taken before building demolition.
 - 3 Division 01 Section "Temporary Facilities and Controls" for temporary construction, protection facilities, and environmental-protection measures for building demolition operations.
 - 4 Division 01 Section "Cutting and Patching" for repairs.
 - 5 Division 01 Section "Construction Waste Management and Disposal" for recycling and disposal of nonhazardous demolition wastes and for removal and storage of refrigerant.

1.3 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to storage areas designated by the Architect.

- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- E. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- E. Asbestos-Containing Materials: Materials that contain more than 1 percent Asbestos as stipulated by the federal AHERA (Asbestos Hazard Emergency Response Act).
- F. Lead-Based Paint: The most severe of paint that contains more than 6 percent lead by weight (600 mg/kg) as stipulated by the SCDHEC (South Carolina Department of Health and Environmental Control) or requirements as stipulated by other governing authorities having jurisdiction.

1.4 MATERIALS OWNERSHIP

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

1.5 SUBMITTALS

- A. General: Prior to beginning demolition, submit each item in this Article for information only, unless otherwise indicated.
- B. Proposed dust-control measures.
- C. Proposed noise-control measures.
- D. Schedule of selective demolition activities indicating the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 6. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other tenants affected by selective demolition operations, methods to protect personnel.
 7. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 8. Means of protection for items to remain and items in path of waste removal from building.
 9. Procedures and methods for shoring, bridging, bracing, and reinforcing.
 10. Methods to protect personnel.
 11. Use of elevator and stairs.
- E. Inventory: Inventory of items to be removed and salvaged. After selective demolition is complete, submit a list of items that have been removed and salvaged.
- F. Inventory of items to be removed by Owner.
- G. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.
- H. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."
1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
- I. Immediately after deposits at landfills, submit landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- J. Insurance: Submit copy of policy showing name of Carrier, effective dates of insurance, and coverage. Submittal shall include all claim exclusions.
- K. Submit detailed procedures that will be used to handle and dispose of hazard materials, including asbestos-containing materials and lead-based paint, found on the project site.
- L. Certifications: Submit a copy of the current and valid license for all operators that will be handling an disposing of lead-base paint.
1. For each operator, their current lead certification, in conformance with OSHA Standard 29CFR1926.62, showing date, place, and type of certification. Lead paint certifications for each operator shall be maintained throughout the demolition contract.

2. Lead physicals for each operator in conformance with OSHA Standard 29CFR1926.62. Lead physicals for each operator shall be maintained throughout the demolition contract.

1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- J. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - i. Inspect and discuss condition of construction to be selectively demolished.
 - ii. Review structural load limitations of existing structure.
 - iii. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - iv. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - v. Review areas where existing construction will remain and requires protection.
 - vi. Review procedures for noise and dust control.
 - vii. Review procedures for protection of adjacent buildings and property.
 - viii. Review items to be salvaged and returned to Owner.
- C. Contractor shall be experienced in handling hazard materials of the type found on the project and licensed by all applicable governing authorities to handle and dispose of all hazard materials found on the site.
- E. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

1.7 PROJECT CONDITIONS

- A. The Owner will remove stored items from the building.

- B. Owner or Architect assume no responsibility for actual condition of buildings to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. The Owner will maintain, as far as practical, conditions existing at time of inspection for bidding purpose. Neither Owner nor Architect assumes responsibility for actual condition of buildings to be selectively demolished.
- D. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition. Except for extenuating circumstances, as determined by the Architect, the Architect will not consider notification of not being able to meet provisions of the Contract Documents or communicating conflicts in the Contract Documents after receipt of bids; comply with the Contract Documents at no increase in Contract Sum or Contract Time.
- E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. Hazardous materials were present in buildings and structures to be demolished. Reports on the presence of hazardous materials and abatement are included in Division 00. Examine reports to become aware of locations where hazardous materials were present..
 - 1. Hazardous materials have been removed by Owner before start of the Work, under a separate contract.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately stop work in the suspected area, and notify Architect and Owner. Owner will have hazardous materials removed.
 - 3. Use construction/engineering controls and good work precautions to minimize exposure to workers and personnel on site. Follow proper procedures in accordance with the Toxic Substance Control Act (TSCA).
 - 4. Do not touch, disturb or approach the suspected area or materials.
 - 5. Erect a barrier around the suspected area or materials, not less than 10 feet from the suspected area or materials. If the area is in a room or space that can be sealed or closed to traffic, seal or close off the space. If there are HVAC vents to the space, seal the vents.
 - 6. Erect a sign that is clearly legible from at least 10 feet. If the sign will be exposed to weather, the sign and lettering shall be weatherproof. Post the sign at each access to the area and around the barrier. Space the signs around the barrier a maximum of 8 feet apart. The sign shall contain the following wording:
 - a. Immediately, stop work in the suspected area.
 - b. Immediately, notify the Architect.
 - c. Do not touch, disturb or approach the suspected area or materials.
 - d. Erect a barrier around the suspected area or materials. The barrier shall not be less than 10 feet from the suspected area or materials. If the area is in a room or space

that can be sealed or closed to traffic, seal or close off the space. If there are HVAC vents to the space, seal the vents.

- e. Erect a sign that is clearly legible from at least 10 feet. If the sign will be exposed to weather, the sign and lettering shall be weatherproof. Post the sign at each access to the area and around the barrier. Space the signs around the barrier a maximum of 8 feet apart. The sign shall contain the following wording:

DANGER

ASBESTOS-CONTAINING MATERIALS ARE PRESENT. DO NOT ENTER OR CROSS THE BARRIER WITHOUT WRITTEN PERMISSION AND APPROVED PROTECTIVE CLOTHING.

- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Storage or sale of removed items or materials on-site will not be permitted.

1.8 SCHEDULING

- A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

1.9 WARRANTY

- A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

1.10 REGULATORY REQUIREMENTS

- A. In addition to the requirements of the "Contract Clauses," comply with the following:
 1. Federal, state, and local hauling and disposal regulations.
 2. Safety requirements shall conform with ANSI A10.6, "Demolition Operations - Safety Requirements";
 3. Standard Building Code, Chapter 33, "Site Work, Demolition and Construction", and Appendix D, "Standards for Demolition";
 4. International Building Code, Chapter 33, "Safeguards During Construction", Section 3303, "Demolition".

1.11 ASBESTOS ABATEMENT

- A. Where asbestos is to be removed or abated, the contractor, supervisors, and workers shall be licensed and trained, in accordance with all applicable governing authorities, including, but not

limited to, the EPA, and OSHA, and the abatement contractor shall have a minimum 5 continuous years' experience in working with applicable governing standards and regulations. All asbestos abatement work will be performed in accordance with the following:

1. 29 CFR 1926.1101 - Occupational Exposure to Asbestos (Construction Industry Standard).
2. EPA Model Accreditation Plan (MAP) asbestos abatement workers training (40 CFR Part 763, Subpart E, Appendix C.).
3. Subpart C, General Safety and Health Provisions for Construction (29 CFR 1926.20 through 1926.32).
4. (29 CFR 1926.1101 and 29 CFR 1915.1001)
5. The EPA National Emissions Standards for Hazardous Air Pollutants (NESHAPS) for the removal and disposal of asbestos materials. (Title 40, Part 61, Subparts A and B.).
6. The EPA Friable Asbestos-Containing Materials in Schools, A Guidance Document (EPA-450/2-78-014/).
7. The EPA Guidance for Controlling Friable Asbestos-Containing Materials in Buildings (EPA 560/5-83-002).
8. OSHA regulations for workplace practices and airborne concentrations during removal, encapsulation, and enclosure (Title 29 Part 1910 Section 1001).

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 2. Use materials whose installed performance equals or surpasses that of existing materials.
 3. Comply with Division 2 Section - Cutting and Patching.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify and record (photographs and videos are recommended) conditions of both the interior and exterior of existing building prior to beginning the Work. Verification shall include current damage to building and finishes, cleanliness, and the presence moisture, mold, and mildew. Inspections by mold and IAQ specialists are recommended.
 1. During execution of Contract, maintain the existing structure in clean, watertight, weather-tight, and structurally sound conditions at all times. Contractor shall be responsible for all repairs to restore existing structure and finishes to their previous conditions that are satisfactory to the Architect.

- B. Verify that utilities have been disconnected and capped.
- D. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs. Comply with Division 01 Section "Project Management and Coordination."
 - 1. Include current damage to building and finishes, cleanliness, and the presence moisture, mold, and mildew. Inspections by mold and IAQ specialists are recommended.
 - 2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
 - 3. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
- E. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Maintain existing utilities in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by ARCHITECT and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to ARCHITECT and to governing authorities.
 - a. Provide not less than 72 hours' notice to ARCHITECT if shutdown of service is required during changeover.
- B. Utility Requirements: Locate, identify, disconnect, and seal or cap off utility services serving building to be interrupted or selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

4. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.
5. Provide by-pass connections necessary to maintain continuous service to occupied areas. Provide minimum of 72 hours advance notice to Owner if shutdown of service is necessary during changeover.
6. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
 - a Where entire wall will be removed, existing services/systems may be removed with removal of the wall.

C. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utility services. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings, facilities, site improvements, appurtenances, and landscaping to remain.
 1. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities and Controls".
 2. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building and covered passageways, where required by authorities having jurisdiction.
 3. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 4. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 5. Cover and protect furniture, furnishings, and equipment that have not been removed.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. Strengthen or add new supports when required during progress of selective demolition.

- D. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during demolition operations.
 - 3 Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

- E. Vegetation: Take and execute all precautions to protect vegetation, such as trees and shrubs that are to remain. The Contractor shall be responsible for all unauthorized or accidental cutting or damaging of trees and shrubs, including damage due to careless operation of equipment and stockpiling materials or tracking on grass by equipment.
 - 1. Trees, bushes, and other vegetation that are scheduled to remain and whose branches and stems are in the way of or that will otherwise interfere with demolition, shall be properly and professionally pruned to protect the trees, bushes, and other vegetation. Pruning shall be performed to the satisfaction of the ARCHITECT by a professional and licensed arborist. Pruning shall be only to the extent necessary to prevent interference with the demolition and to protect the trees, bushes and vegetation being pruned.
 - 2. Trees, bushes, and other vegetation that are scheduled to remain and are damaged during demolition shall be repaired by a professional and licensed arborist. Trees, bushes, and other vegetation that that cannot be repaired to the Architect 's satisfaction, shall be replaced with like kind, species, color, and size, at no additional cost to the Owner.

- F. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during demolition operations.

- G. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from ARCHITECT and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

- H. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
 - 1. No interior demolition is expected
 - 2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
 - 4. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 5. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

6. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
 7. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
 8. Cover and protect furniture, furnishings, and equipment that have not been removed.
 9. Do not allow any area, section, or component of floors, roofs, walls, columns, pilasters, or other structure element to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.
- I. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
1. Construct dustproof partitions of not less than nominal 4-inch studs, 5/8-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on the demolition side.
 2. Insulate partition to provide noise protection to occupied areas.
 3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
 4. Protect air-handling equipment.
 5. Weather-strip openings.
- J. Provide and maintain exterior, and when required, interior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to be selectively demolished.
1. Strengthen or add new supports when required during progress of selective demolition.
- K. Set up, install, and maintain necessary security, enclosures, and barriers for the facility during demolition and construction to protect the structure, the interior, and the contents and to ensure that unauthorized personnel are denied access to the facility. Coordinate requirements with the Architect .

3.4 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
- B. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.

Comply with requirements in Division 01 Sections “Tree Protection” and “Temporary Facilities and Controls.”

1. Protect adjacent walls, windows, roofs, and other exterior construction, existing site improvements, appurtenances, and landscaping to remain from damage due to demolition operations.
2. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
3. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.

C. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations. Coordinate with the Owner.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 3. Provide at least 72 hours’ notice to occupants of affected buildings if shutdown of service is required during changeover.

D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.

C. Carefully clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations to avoid damage by cleaning. Return adjacent areas to condition existing before start of selective demolition.

D. Noise Control:

1. Use equipment with operable, effective, and undamaged mufflers to reduce noise to levels acceptable to the Architect .

2. If noise levels are above acceptable levels to the Architect erect sound barriers to control noise or conduct demolition during times that are less disturbing to the Owner or a combination of both.

3.6 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction only to the extent required by renovations and restoration as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
 1. Performed all demolition in accordance with OSHA regulations and provisions stipulated in IBC 2006.
 2. Explosives are prohibited
 3. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
 4. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 5. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 6. Cutting torches and open flames are not permitted.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and removed debris so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 11. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

- B. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools.
- C. Break up and remove concrete slabs on grade, unless otherwise shown to remain.
- D. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.
- E. Remove no more existing roofing than can be covered in one day by new roofing. See applicable Division 7 Section for new roofing requirements.
- F. Remove and transport debris and rubbish in a manner that shall prevent spillage on pavements, streets or adjacent areas. Clean up spillage from pavements, streets and adjacent areas
- G. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete.
- H. Unknown Elements
 - 1. If unanticipated mechanical, electrical or structural elements are encountered, investigate and measure both nature and extent of the conflict. Submit report to ARCHITECT in written, accurate detail. Pending receipt of directive from Architect; rearrange selective demolition schedule as necessary to continue overall job progress without delay.
 - 2. Should any hidden and/or inaccessible hazardous material be encountered during the demolition activity, the Contractor performing the demolition shall stop work immediately. Use construction/engineering controls and good work precautions to minimize exposure to workers and personnel on site. Follow proper procedures in accordance with the Toxic Substance Control Act (TSCA).
- I. Site Access and Temporary Controls: Conduct demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- J. Do not use water mist to limit spread of dust and dirt when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- K. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 - 3. Protect items from damage during transport and storage.

- 4 Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.7 PATCHING AND REPAIRS

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Patching is specified in Division 1 Section "Cutting and Patching."
- C. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed recommendations.
- D. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- E. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.
 1. Closely match texture and finish of existing adjacent surface.
 2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 3. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the surface has received primer and second coat.
 4. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 5. Inspect and test patched areas to demonstrate integrity of the installation, where feasible.
- F. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.8 DAILY CLEANUP AND DISPOSAL OF DEMOLISHED MATERIALS

- A. Daily Cleanup: The Contractor shall comply with the following daily cleanup requirements:

1. Do not allow demolished materials, trash, debris, waste, defective materials, and unused materials, equipment and tools to collect in the work areas, areas objectionable to the Owner, or in areas that will be unsightly to passersby. Remove these items on a regular schedule, and dispose of in approved manner and container.
2. Store materials that cannot be removed daily in areas specified by the Contract Manager.
3. Keep work area clean and free of clutter.
4. Secure all materials, equipment, and tools to prevent movement during windy conditions. Do not allow material or debris to become airborne.
5. Cover all materials, equipment, and tools completely at the end of each day to prevent water entry and so that covers will not loosen or separate during windy conditions.
6. Promptly remove all unused or unneeded sharp or pointed objects, including sheet metal, that may puncture cause injury or damage to the Work.
7. Keep all fasteners, anchors, etc, including screws and nails, in rigid storage containers until ready for use. Put all used or defective mechanical fasteners in a designated rigid container that is clearly marked, SCRAP. Do not allow used or defective fasteners to mix with new fasteners.
8. Correct all defects not corrected during normal operations by end of each work day.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.9 CARE OF CUTS AND ABRASIONS

A. Where cuts and minor abrasions occur to living tissue of trees and shrubs, trace back injured cambium according to arboriculture practice and have wounded area treated by a professional and licensed arborist.

3.10 CLEANING

A. Sweep the building broom clean on completion of selective demolition operation.

B. Change filters on air-handling equipment on completion of selective demolition operations.

END OF SECTION 02 41 12

SECTION 05 50 00 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following metal fabrications:
 - 1. No welding is to be performed on site. Perform all welding in the shop.
 - 2. Loose steel lintels.
 - 3. Miscellaneous framing and supports for applications where framing and supports are not specified in other sections.
 - 4. Field surface preparation and field touch-up.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 09 Section "Painting" for touch up of metal fabrications.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
 - 1. Show method and details of bracing, including type and size of members and connections to be used, for all roof penetrations that are 12 inches or greater in diameter.
- C. Samples representative of materials and finished products as may be requested by Architect.
- D. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include a list of completed projects with project name, addresses, names of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in producing metal fabrications similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work.
- B. Substitute Requests For A Specified Entity
1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without “Or equal” or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected.

Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.

- a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
 7. The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
 8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.

9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
 - a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver metal fabrications to Project site in such quantities and at such times to ensure continuity of installation and ready for installation.
 1. At delivery and prior to unloading, examine all steel for signs of thin or no shop primer. If shop-primed steel has numerous signs of improper packing, handling, or preparation, as evidenced by numerous breaks, chips, scratches, and heavily rusted areas in the shop primer, do not accept the steel. Where existing primer appears to be thin as evidenced by shadows or variegated appearance, or rust bloom, check thickness of primer with a magnetic thickness tester such as a Positester.
 2. If unloaded, staged, or erected shop-primed steel is found to have low shop-primer as described above, the Contractor shall be responsible for bringing the required surface preparation and priming to bring the shop primer thickness to the specified dry film thickness, even if the steel is erected.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Handle and protect steel members and packaged materials from damage, corrosion, and deterioration. Do not erect rust steel.
 1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.

2. Stack in such a manner that surface water will properly drain. If materials are to be stored for an extended period of time, cover in such a way that rain will not fall on the material, but air will flow freely through the stack.
3. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.
4. Store steel so as to be protected from mud and dirt. Remove all traces of mud and dirt prior to erecting. Mud and dirt shall be removed carefully to prevent damage to the primer.

1.7 SEQUENCING

- A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 FERROUS METALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Steel Plates, Shapes, and Bars: ASTM A 36.
- C. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 malleable iron or ASTM A 27 cast steel. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A 153.

2.2 PAINT

- A. Shop Primer for Ferrous Metal: Compatible with finish paint systems indicated, and capability of providing a sound foundation for field-applied topcoats despite prolonged exposure. Compatible with finish paint specified in Section 09900 - Painting. Capable of being applied to a minimum dry film thickness of 3 mils DFT and cover surface profile created by surface

preparation. Shop primer to be by the same manufacturer as the finish coat. Cross coating is not permitted.

1. Interior Steel: Sherwin Williams Kem Kromick Universal Primer B50WZ1 White or a reviewed substitute. Shop painted steel that arrives on site with a red or gray primer will be re-primed in the field with the specified primer at the Contractor's expense.
2. Exterior: Hot dipped galvanized

B. Galvanizing Repair Paint: C. Galvanizing Repair Paint: Galvilite Cold Galvanizing Repair Compound, Esterified Epoxy Based Zinc Rich Metal Primer by ZRC Worldwide or a reviewed substitute. Use to repair all damaged galvanizing. As a minimum, galvanizing repair shall comply with the following:

1. Specifications: Fed. Spec. DOD-P-21035A and Mil Spec. Mil-P-26915A
2. Registration: ISO 9001
3. VOC Compliant
4. Zinc in Dried Film: 95 percent, ASTM D520 Type III
5. Percent Solids: 52 percent by volume.
6. Pencil Hardness: 2H per ASTM D3363
7. UL: Recognized by UL as being equivalent to hot dipped galvanized
8. Impact Resistance: Greater than 30 inch-lbs. per ASTM D2794
9. Abrasion Resistance: 11.5 liters per dry mil when tested at 3 mils DFT per ASTM D98
10. Dry Time to Touch: 20-30 minutes at 1.5 mils DFT
11. Recoat Time: 24-48 hours

2.3 FASTENERS

A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating. Select fasteners for the type, grade, and class required.

1. All fasteners in an exterior application or that are in contact with wood or cementitious materials shall be galvanized in accordance with ASTM A153.

B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A, with hex nuts, ASTM A 563, and, where indicated, flat washers.

C. Machine Screws: ANSI B18.6.3.

D. Lag Bolts: ANSI B18.2.1.

E. Wood Screws: Flat head, carbon steel, ANSI B18.6.1.

F. Plain Washers: Round, carbon steel, ANSI B18.22.1.

G. Lock Washers: Helical, spring type, carbon steel, ANSI B18.21.1.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in

unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

1. Material: Carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 2. Material: Group 1 alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594.
- I. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as required.

2.4 GROUT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- B. Products: Subject to compliance with requirements, provide one of the following:
1. Nonshrink, Nonmetallic Grouts:
 - a. B-6 Construction Grout; W. R. Bonsal Co.
 - b. Diamond-Crete Grout; Concrete Service Materials Co.
 - c. Supreme; Cormix Construction Chemicals.
 - d. Sure-grip High Performance Grout; Dayton Superior Corp.
 - e. Euco N-S Grout; Euclid Chemical Co.
 - f. Five Star Grout; Five Star Products.
 - g. Vibropruf #11; Lambert Corp.
 - h. Crystex; L & M Construction Chemicals, Inc.
 - i. Masterflow 928 and 713; Master Builders Technologies, Inc.
 - j. Sealtight 588 Grout; W. R. Meadows, Inc.
 - k. SonogROUT 14; Sonneborn Building Products--ChemRex, Inc.
 - l. Kemset; The Spray-Cure Company.

2.5 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Galvanize all ferrous metal
1. In contact with cementitious material and earth
 2. Used for exterior applications

- C. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- D. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 100 deg F.
- E. Shear and punch metals cleanly and accurately. Remove burrs.
- F. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- G. Remove sharp or rough areas on exposed traffic surfaces.
- H. Shop-Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- I. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- J. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- K. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- L. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- M. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.6 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Shop-Weld adjoining members together to form a single unit where indicated.
- C. Size loose lintels for equal bearing of 1 inch per foot of clear span but not less than 8 inches bearing at each side of openings, unless otherwise indicated.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports for applications indicated that are not a part of structural steel framework as required to complete the Work.
- B. Fabricate units to sizes, shapes, and profiles indicated and required to receive other adjacent construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - 1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.
 - a. Except as otherwise indicated, space anchors 24 inches o.c. and provide minimum anchor units in the form of steel straps 1-1/4 inches wide by 1/4 inch thick by 8 inches long.

2.8 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes.
- B. Finish metal fabrications after assembly.
- C. Hot-dip galvanize all ferrous metal in exterior locations, in exterior walls, and in contact with cementitious or masonry construction, or with treated wood.

2.9 HOP PRIMING

- A. Shop prime steel surfaces not galvanized except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Surfaces to be high-strength bolted with slip-critical connections.

4. Surfaces to receive sprayed-on fireproofing.
 5. Galvanized surfaces.
 6. Faying surfaces.
- B. Preparation for Shop Priming: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare uncoated ferrous metal surfaces to comply with requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:.
1. Exteriors (SSPC Zone 1B): SSPC-SP 2 "Solvent Cleaning." followed by SSPC-SP 6 "Commercial Blast Cleaning" for metals to be galvanized, and metals scheduled for exterior use ."
 2. Interiors (SSPC Zone 1A): SSPC-SP 2 "Solvent Cleaning." followed by SSPC-SP 3 "Power Tool Cleaning."
- C. Shop Priming
1. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop painting. Apply shop primer to cover profile of surface preparation.
 2. Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 3.0 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
 3. Do not allow prepared and cleaned surfaces to remain unprimed over night or for longer than 8 hours before priming. Surfaces not primed within these parameters shall be recleaned prior to priming.
 4. Stripe paint corners, crevices, bolts, rivets, welds, and edges. Spray all Bolts and rivets from at least 4 different angles. Cover all sides of rivets and bolts equally.
 5. Apply 2 coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.
- D. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements. If not indicated, then galvanize all ferrous metals exposed to moisture or weather, and that are in contact with wood, masonry, or cementitious materials:
1. ASTM A 153 for galvanizing iron and steel hardware.
 2. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick or thicker.

3. Galvanize steel and fasteners in the following conditions:
 - a. Where indicated
 - b. All steel in contact with earth, cementitious materials, wood, and insulation. Surfaces to receive sprayed fireproofing are not to be galvanized unless recommended by the fire proofing manufacturer. Galvanize entire member even is only a portion of the member is in contact.
 - c. All steel that will be exposed to weather or to frequent moist conditions.
 4. Prepare all surfaces to be galvanized according to SSPC SP6 – Commercial Blast.
- E. Steel that arrives on site with rusted or damaged surfaces may be inferred as improper handling, surface preparation, or shop priming and will be corrected at the fabricator's expense or may be rejected if rusting is excessive. The General Contractor shall be responsible for all steel that is accepted with rusting or damaged surfaces.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.2 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

- E. Field Welding: Not permitted:

- F. Back Priming: For all unprimed steel and steel with damaged primer or galvanizing, back prime, including all edges and concealed surfaces, of all ferrous and galvanized metal prior to installation. Apply primer to the same specifications as for the exposed surfaces. Treat all cut edges, end cuts, welds, and otherwise disturbed surfaces in the same way. Ferrous items shall be completely encapsulated with primer. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to all ferrous and galvanized steel that is installed in exterior locations, in unconditioned spaces, and that are in contact with wood or cementitious materials. However, do not prime faying surfaces, surfaces that are to receive sprayed fire proofing, or other scheduled or noted surfaces not to be primed. Comply with surface preparation and priming specified in Section 09900 – Painting.
 - 1. Protect primed and finished steel that is in contact with masonry and cementitious surfaces from abrasion and corrosion caused by alkali action. Protection shall not interfere with rigidity of installation.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and primer damaged during handling and erection. Apply paint to exposed areas using same material as used for shop painting. Perform all surface preparation and priming as described for shop performed surface preparation and priming in Part 2 of this specification.
 - 1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint according to ASTM A 780. Perform all surface preparation as described for shop performed surface preparation in Part 2 of this specification.

END OF SECTION 05 50 00

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 1. Framing with dimension lumber.
 2. Framing with engineered wood products.
 3. Wood furring, grounds, nailers, and blocking.
 4. Sheathing.

1.3 DEFINITIONS

- A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise specified.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Material certificates for dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee's (ALSC) Board of Review.
- C. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards and rules, regulations, standards, and restrictions of applicable governing authorities.
 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.

- D. Certification that furnished, untreated plywood meets requirements for a Class C (Flame Spread of 200 or less) Classification in accordance with ASTM E84.
- E. Warranty of chemical treatment manufacturer for each type of treatment.
- F. Substitute Requests For A Specified Entity
 - 1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 - 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without “Or equal” or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 - 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 - 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 - 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.

- a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
7. The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the

following requirements. Requests without the signature of a responsible person will be rejected.

- a. That the specifications have been read and are understood,
- b. That the entity being submitted meets or exceeds all provisions of the specifications,
- c. That all submitted information is true and accurate,
- d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
- e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.
 1. Protect all lumber from rain, fog, snow, dew, and all other forms of moisture that may alter moisture content above specified requirements. The moisture content of lumber and plywood may be checked in the field with a reliable moisture meter.
 2. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.
 3. Lumber to be used in roofing construction shall be stored to permit free circulation between each piece. Take all precautions to prevent warping, twisting, racking, and other distortions and to keep wood within the specified moisture content.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Plywood
 - a. Boise Cascade Corporation
 - b. Georgia-Pacific
 - c. Louisiana-Pacific Corporation
 - d. Weyerhaeuser Company
 2. Wood-Preservative-Treated Materials:
 - a. Baxter: J. H. Baxter Co.
 - e. Hoover Treated Wood Products, Inc.
 - f. Osiose Wood Preserving, Inc.

h. Willamette Industries, Inc.

2.2 LUMBER, GENERAL

- A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.
1. Texture: Smooth, flat, tight grain surface that will not telegraph grain through painted finish. Solid lumber stock, finger joints not acceptable. All wood and lumber shall be straight, flat, and true without bows, warps, splinters, cracks, nicks, or gouges.
- B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
1. NELMA - Northeastern Lumber Manufacturers Association.
 2. SPIB - Southern Pine Inspection Bureau.
 3. WCLIB - West Coast Lumber Inspection Bureau.
 4. WWPA - Western Wood Products Association.
- C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.
- D. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
1. Provide dressed lumber, S4S, unless otherwise indicated.
 2. Kiln dry-dry lumber to 19 percent maximum moisture content prior to dressing for 2-inch nominal thickness or less, unless otherwise indicated.
 3. All lumber shall be sound, properly seasoned, and dry and be free of twists, warps, bends, racking, knots, sap, and bark. Edges and sides shall be uniform in dimension and shape with no signs of bark removal.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General:
1. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

2. Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWWA C2 (lumber) and AWWA C9 (plywood). Comply with EPA and VOC requirements for treated materials. Use only materials that are approved for use by the applicable governing authorities for the intended application. Preservative materials shall provide performance equal to CCA when used in comparable conditions, locations, and applications. Where CCA is not acceptable to governing authorities, use alternative preservative materials such as ASQ that will provide performance equal to CCA, and that are acceptable to governing authorities.
 3. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
 4. Obtain lumber only from true lumber yards that specialize in lumber and wood building materials and that are capable of kiln-drying lumber that meets these drying requirements or can provide such lumber.
 5. All lumber with moisture content exceeding 19 percent will be rejected. If this lumber is installed, it shall be removed and replaced with dry lumber at the Contractor's expense. This provision will be strictly enforced.
- A. B. Treat indicated items and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, sleepers, blocking, furring, stripping, framing, supporting members, and similar concealed members in contact with masonry or concrete.
 3. Wood supporting members used in the construction of suspended decks or porch decks, moist or humid air, or enclosed construction that is exterior to the building envelope.
 4. Wood framing members less than **18 inches** above grade.
 5. Wood floor plates that are installed over concrete slabs directly in contact with earth.
- C. Drying Requirements
1. Prior to sizing and pressure treating lumber, dry to 19 percent.
 2. After treatment, kiln-dry lumber and plywood to a maximum moisture content
 - a. Lumber: 19 percent
 - b. Plywood: 15 percent.
- D. Retention Rates. Minimum:
2. 1. for lumber treated with ACQ: 0.40 pcf.
 3. for lumber treated with CA-B: 0.21 pcf.
 4. for lumber treated with CA-A: 0.41 pcf
- E. Complete fabrication of treated items before treatment, where possible. If cut, drilled, or scratched, or otherwise abraded after treatment, apply field treatment complying with AWWA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.
- F. Separation Sheet: Peel and stick high temperature resistance-type with a minimum softening temperature of 260 deg. F. PolyStick MU by Polyglass, Strongseal Plus HT CETCO, or equal by WR Grace for separating treated wood from metal.

2.4 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.
- D. Grade: For dimension lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common grade per NELMA or WWPA; No. 2 grade per SPIB; or Standard grade per WCLIB or WWPA of any species.

2.6 PLYWOOD, GENERAL

- A. Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D5456 and manufactured with an exterior-type adhesive complying with ASTM D2559 and containing no urea formaldehyde.
- B. Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood," where plywood is indicated. Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements. Certification: Provide certification that plywood, untreated with fire-retardant, meets Standard Building Code Congress requirements for a flame spread of 200 or less (Class C) when tested in accordance with ASTM E84.
 - 1. Provide the following minimum standard:
 - a. Extreme Fiber Stress in Bending, Edgewise: 3100 psi for 12-inch nominal-depth members.
 - b. Modulus of Elasticity, Edgewise: 2,000,000 .

2.7 CONCEALED, PERFORMANCE-RATED STRUCTURAL-USE PANELS

- A. General: Where structural-use panels are indicated for the following concealed types of applications, provide APA-performance-rated panels complying with requirements designated under each application for grade, span rating, exposure durability classification, and edge detail (where applicable).

1. Thickness: Provide panels meeting requirements specified but not less than thickness indicated.

2.8 STRUCTURAL-USE PANELS FOR BACKING

2.9 FASTENERS

- A. General: Provide fasteners of size and type indicated and that comply with requirements specified in this Article for material and manufacture.
 1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.
 2. Treated Wood: All fasteners and connectors in contact with treated wood shall be Type 304 stainless steel or hot dipped galvanized per ASTM A153, G185. No exceptions. Mechanically galvanized is not acceptable.
 3. For roof blocking and nailers, comply with fastener size as required to meet specified wind uplift forces.
 - a. NES NER-272 for power-driven fasteners.
 - b. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105. Nails shall be of the thickness required to penetrate 2/3 of the substrate.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Fasteners For Plywood Roof Sheathing: Galvanized screws with appropriate plate of size as recommended by APA to meet specified wind uplift. Where installed over a gymnasiums, auditorium, etc., the point of fasteners shall not extend so as to impale basketballs, volleyballs, soccer balls, etc.

2.10 SHEATHING

- A. Plywood Wall and Roof Sheathing: APA Structural I, Exposure Rating 1; Span Rating and thickness as required to suit supports and spacing.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Apply field treatment complying with AWWA M4 to cut or abraded surfaces of preservative-treated lumber and plywood.
- E. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. CABO NER-272 for power-driven staples, P-nails, and allied fasteners.
 - 2. "Table 1705.1--Fastening Schedule," of the IBC - 2003.
- F. Use common wire nails, unless otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.
- G. Use hot-dip galvanized nails where rough carpentry is exposed to weather, in ground contact, fastens treated wood, or in area of high relative humidity.
- H. Countersink nail heads on exposed carpentry work and fill holes with wood filler.
- I. Back Priming: For all wood materials scheduled to be painted, including treated wood, back prime, including all edges and concealed surfaces, prior to installation. Apply primer to the same specifications as for the exposed surfaces. Treat all cut edges, end cuts, and disturbed surfaces the same way. Wood items shall be completely encapsulated with primer. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to both interior and exterior installations.
- J. Treated Wood: Where metal, including aluminum and stainless steel, both coated and uncoated will contact treated wood, separate the metal from the treated wood with the specified separation sheet. Place the adhesive side of the separation sheet in contact with the metal. Metal items to be separated include but are not limited to plates, shims, washers, fasteners, etc.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install wood grounds, nailers, blocking, and sleepers where shown and where required for screeding or attaching other work. Form to shapes shown and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.
 - 1. Provide proper blocking, supports, and reinforcement behind all points to receive applied or suspended loads such as handrails, toilet accessories, coat hooks, door stops, handrails, cabinets, casework, TV brackets, projection screens, etc. Reinforcement shall be rigid enough to allow drawers loaded to rated capacity to be fully extended without causing casework to sag, droop, bind, or other distortions and to not pull away from the mounts or fasteners and without causing fasteners to loosen or pull from mounts or walls.
- C. Install permanent grounds of dressed, preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.
- D. Roofing Blocking And Nailers
 - 1. Construct of treated No. 2 or better lumber.
 - 2. For nailers used to secure edge metal, use lumber nominal 6-inch wide lumber and of a thickness to ensure that the top surface of the nailer will be flush with the top surface of the top layer of installed insulation.
 - 3. Install at perimeter of roof as indicated on the Drawings. Top of installed nailers shall be even with the top layer of insulation to be installed under the roof membrane.
 - 4. Individual nailer lengths shall not be less than 3 feet long.
 - 5. Install continuous wood nailer at the perimeter of the entire roof and around roof projections and penetrations as shown on the Contract Documents.
 - 6. All curbs shall be a minimum of 10 inches above finished roof membrane.
 - 7. Nailer attachment shall comply with this requirement and with the current FM Loss Prevention Data Sheet 1-49 and to meet the following:
 - a. NES NER-272 for power-driven fasteners.
 - b. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 8. Fasten with screws where ever possible.
 - 9. Use bolts, straps or nails to securely anchor nailers embeded in, that are in contact with concrete, or are covered with metal.
 - 10. Anchor nailers to resist a minimum force of 300 pounds per lineal foot in any direction.
 - 11. Space nailer fasteners 12 inches on center or 16 inches on center as required to coincide with structural framing. However the 300-pound per lineal foot minimum force in any direction must be maintained.
 - 12. Stagger fasteners 1/3 the nailer width and install within 6 inches of each end. Install 2 fasteners at the ends of nailer lengths.

13. Existing Nailers: Nailers that are to remain shall be firmly anchored in place to the structure to resist a minimum force of 300 pound per lineal foot minimum force in any direction. Nailers shall be of rot, deterioration, and excess moisture (above 19percent).
14. Take all precautions to ensure that moisture content of wood before and after installation does not exceed the specified moisture content for pressure treated wood.

3.3 WOOD FRAMING

- A. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Install framing members of size and at spacing indicated.
- D. Do not splice structural members between supports.
- E. Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel. Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs; except single top plate may be used for non-load-bearing partitions. Nail or anchor plates to supporting construction, unless otherwise indicated.
 1. For exterior walls, provide studs of indicated size.
- F. Construct corners and intersections with 3 or more studs. Provide miscellaneous blocking and framing as shown and as required to support facing materials, fixtures, specialty items, and trim.
 1. Provide continuous horizontal blocking at midheight of single-story partitions over 96 inches high and multistory partitions, using members of 2-inch nominal thickness and of same width as wall or partitions.
- G. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Set headers on edge and support on jamb studs.
 1. For non-load-bearing partitions, provide double-jamb studs with headers not less than 4-inch nominal depth for openings 36 inches and less in width, and not less than 6-inch nominal depth for wider openings.
 2. For load-bearing walls, provide double-jamb studs for openings 72 inches and less in width, and triple-jamb studs for wider openings. Provide headers of depth shown or, if not shown, as recommended by AFPA's "Manual for Wood Frame Construction."
- H. Provide bracing in exterior walls, at both walls of each external corner, full-story height, unless otherwise indicated. Provide one of the following:

- I. Tolerances: Comply with the most stringent of following tolerances or industry standards and local governing codes:
 1. Moisture content of wood framing shall be maximum 19 percent.
 2. Wood framing shall be straight and true.
 3. Framing member shall be plumb and level within 1/8 inch in 8 feet prior to attaching gypsum any siding or paneling including gypsum panels.
 4. Framing members shall not vary more than 1/8 inch from the plane of the faces of adjacent members.
 5. Completed framing installation shall allow gypsum drywall to be installed in accordance with Gypsum Association GA 214 and 214, and ASTM C840.

3.4 INSTALLATION OF PLYWOOD

- A. General: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of plywood panels and applications indicated.
 1. Comply with "Code Plus" provisions of above-referenced guide.
- B. Fastening Methods: Fasten panels as indicated below:
 1. Plywood Backing Panels: Nail or screw to supports.

3.5 SHEATHING

- A. Plywood
 1. General
 - a. Fasten plywood sheathing panels to intermediate supports and then at edges and ends. Use galvanized nails. Nail to comply with manufacturer's recommended spacing. Drive fasteners flush with surface of sheathing and locate perimeter fasteners at least **3/8 inch** from edges and ends.
 - b. Install **48-by-96-inch** or longer sheathing vertically with long edges parallel to, and centered over, studs. Install solid wood blocking where end joints do not occur over framing. Allow **1/8-inch (3-mm)** open space between edges and ends of adjacent units. Stagger horizontal joints, if any.
 - c. Install sheathing without sags or depressions and so the all edges and butted surfaces are even and flush with each other. Ensure that all surfaces as free of splinters and sharp edges.
 - d. Where indicated, apply air-infiltration barrier over sheathing as soon as practical after installation to prevent deterioration from wetting.

3.6 MOISTURE PROTECTION

A. General

1. It is understood that moisture content of wood can fluctuate because of variations in ambient/atmospheric conditions. However, normally, this will not adversely affect properly dried and stored wood. Treated wood with a moisture content above the specified level shall not be received, staged, or installed.
2. Nailers and blocking that have a moisture content above the specified level at the time roof installation begins shall be removed and replaced with acceptable nailers and blocking.
3. After wood nailers and blocking have been installed, take all precautions deemed necessary to keep the wood within the specified moisture content. These precautions can include, but are not limited to, covering and leaving wood exposed to sun or to dry air or dry breezes.
4. Exterior wood exposed to weather shall be covered when rain is imminent. Uncover exposed wood as soon as weather has cleared to allow any moisture trapped under the cover to escape. Wet wood is subject to removal and replacement with dry wood.

B. When Covering Nailers That Are Installed To The Roof Deck Perimeter

1. Cover the wood nailers with plastic sheet
2. Lap end joints 6 inches and tape.
3. Fasten plastic in place to prevent blow off or moisture intrusion until the roof is installed.
4. The plastic will be removed as the roof is installed or as required to keep moisture content within the specified moisture content. In no case will the plastic be removed until it is time to install the roof insulation adjacent to the nailers.

C. When Covering Nailers At Tops Of Parapets And Other Locations Where The Nailers Will Be Covered With Sheet Metal,

1. Cut and install sheet so that the edges of the plastic extend over the top of the wood and down each side a minimum of 3 inches.
3. Lap end joints 6 inches minimum and tape the laps securely.
2. Nail the plastic in place with roofing nails spaced 12 inches oc along each side of the nailers. Do not nail to the top of the nailer or blocking.
4. Sheet metal will be installed directly over this plastic. This plastic cover must not be removed when the sheet metal is installed.

END OF SECTION 06 10 00

SECTION 06 20 00-CARPENTRY CONSERVATION

PART 1 – GENERAL

1.1 Description of Work

- A. Carpentry conservation shall be performed on all deteriorated wood elements, defined as either being structural elements or architectural millwork.
- B. The conservation of structural elements shall involve the repair of existing elements and the replication and installation of replacement elements. The repair areas include both interior and exterior elements including patching and repairing wood floors.
- C. The conservation of architectural millwork shall involve resetting of millwork, the repair of existing millwork, and replication and installation of replacement millwork.
- D. All of the exterior millwork shall be conserved. Only missing elements shall be replicated.

1.2 Related Work

- A. Coordinate and perform the repair of all surrounding and adjacent masonry.
- B. All corrective work involving the water carry-off system and masonry shall be performed before or coordinated with the carpentry repairs.
- C. Coordinate Work specified under this section with Division 06 Sections Millwork And Laminated Plastic Casework and Rough Carpentry.

1.3 Precautions

- A. Great care shall be taken in the disassembly of architectural millwork and structural elements to prevent damage to these elements and to insure that they can be reinstalled in the work.
- B. In the performance of the work, note and report to the owner all discoveries of hidden deterioration or sources of deterioration.

1.4 Qualifications

- A. All tradesmen performing the work shall be skilled and experienced in each type of work specified.

1.5 Product Samples

- A. Supply one-foot lengths of millwork wood species that demonstrate the general quality of replacement finish wood for each element to be installed.
- B. Supply owner with treatment plans, written description of preserving treatment standard, and retention.
- C. The contractor shall deliver to the Architect a complete, clean label for each product proposed for use in the preparation or execution of the epoxy repairs.
- D. In addition, the contractor shall deliver to the Architect the product technical sheets prepared by the manufacturer for each product or material. The products include, but are not limited to, each epoxy product, including resins, curing agents, fillers and solvents.
- E. The contractor shall submit cured material samples for all epoxy repair materials. Cured samples of each epoxy product or formulation shall be submitted separate from the mockup samples. For each epoxy filler, consolidant and adhesive submit 3 samples, each approximately 1 inch round and 2 inches long. For each consolidant submit 3 additional samples, each approximately 1/8 x 1/2 x 6 inches. For the 1 x 2 round samples plastic, 35mm film containers are generally used, if filled completely with each epoxy product.

1.6 Mockups

- A. The contractor shall submit mockups for all epoxy repair techniques and repair joints. The mockups shall demonstrate the preparation, application, working and finishing requirements of the epoxy conservation described in the specifications and shown in the drawings.
- B. The mockups shall be of a sufficient size to fully demonstrate the described repairs.
- C. Historic materials of the building shall not be used in the mockups, nor shall the mockups be attached to the existing construction. The installation techniques shall be demonstrated with new wood, or deteriorated wood, of sufficient dimensions to represent the existing conditions of the construction.

1.7 Material Storage

- A. All wood elements removed from the work that are to be reinstalled shall be stored in a secure, dry, and protected area.
- B. All replacement millwork shall be delivered to the site as it is required for installation in the work. Long-term storage at the site shall be avoided.
- C. All products shall be delivered in original unopened containers, protected from freezing, and stored in a protective area to prevent contamination.

1.8 Local Conditions

- A. Painting shall not be performed below 50 degrees F.
- B. Epoxy products shall not be used below 50 degrees F.
- C. The warm weather temperature for epoxy use shall be as specified by the manufacturer.
- D. All repair areas and newly installed wood elements shall be protected from rain and weather until areas are closed and finish coats are applied.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Moisture Content: At time of delivery, average moisture content of wood flooring to be 6 to 9 percent, with a maximum of 12 percent for any one piece and not more than 5 percent outside of given average range.
 - 1. Maximum of 13 percent may be allowed along United States' coastal areas in the summer.
- B. Protect wood flooring from exposure to moisture in shipment, storage, and handling. Deliver in unopened cartons or bundles and store in a dry place with adequate air circulation. Do not deliver material to building until concrete, plaster, masonry, ceramic tile, and other wet work is complete and cured to a condition of equilibrium and temperature and humidity are maintained at or near occupancy levels.
- C. Maintain ambient conditions to ensure that moisture content of wood does not exceed 12 percent max. for millwork and 19 percent for structural elements as measured with a Delmhorst or Tramex pin or capacitance moisture meter.

PART 2 - PRODUCTS

2.1. Materials

A. Interior Structural Wood

- 1. Wood for structural repairs shall be of dense heart fir or poplar with clear and tight grain free of knots, checks, twists, and sap/resin weeping; and dried to a moisture content between 8% and 12%. When used in an epoxy repair, shall have a similar density and growth ring orientation as the existing element. Verify load carrying capabilities of interior structural wood will meet project requirement based on spans, expected loads, and acceptable deflections.

2. Note: In exposed positions, structural replacement material may also be required to match the species and appearance of existing wood elements.

B. Exterior Structural Wood

1. Wood for structural repairs shall be of dense Cypress with clear and tight grain free of knots, checks, twists and sap/resin weeping; and dried to a moisture content of 16 percent. When used in an epoxy repair, shall have a similar density and growth ring orientation as the existing element. Verify load carrying capabilities of exterior structural wood will meet project requirement based on spans, expected loads, and acceptable deflections.
2. Note: In exposed positions, structural replacement material may also be required to match the species and appearance of existing wood elements.

C Preservative Treated Wood

1. Where lumber or wood is to be treated, comply with the requirements of the American Wood Preservers Bureau. Coordinate the use of treated wood with the Architect prior to selecting or and installing. Use only with the Architect permission.
2. Wood in contact with concrete, masonry, or steel shall comply with AWPB LP-2, kiln-dry to 19 percent or less, unless a more stringent requirement is noted on the drawings.
3. Wood in contact with epoxy adhesives in on-site repairs that require treatment shall be flushed with a non-oil type wood preservative, such as Osmose.

D Architectural Millwork

1. All wood for millwork shall be straight grained, free of checks, knots, splits, twists, cupping, and warps.
2. Wood Species:
 - a. Exterior Applications: ‘Dense cypress.
 - b. Interior Application: Fir or poplar to be painted or recycled heart pine or oak for clear finish.
3. All flooring, fascias and running lengths of millwork shall be special cut quarter-sawn or radically sawn material.
4. Flooring: Reclaimed heart pine or oak to match existing floor but not greater than 2 ¼ ” face width unless approved by the architect. All new flooring must run perpendicular to the floor framing.

E Fasteners

1. All exterior structural repair fasteners, including nuts, washers, bolts and ties shall be type 304 or 306 stainless steel.
2. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.
 - a. Where finish carpentry materials are exposed in areas of high humidity, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A 153/A 153M.
3. All screws shall be plated and of sufficient length to penetrate backing material a minimum of one inch.
4. All nails for exterior millwork shall be a minimum type 304 or 306 stainless steel. No wire finish nails or electroplated nails shall be allowed.
5. Structural repair nailing shall be made with ring shank nails or better, as produced by Swan Secure Products, Inc., 1701 Parkman Avenue, Baltimore, MD, 301/646-2800.
6. Steel anchors in contact with masonry shall be fabricated from type 304 or 306 stainless steel.

F Epoxy Resins

1. Epoxy resins shall be equal to E-152, by Allied Resin, Weymouth Industrial Park, East Weymouth, Mass. 02189, 617/337-6070.
2. Epoxy filler shall be equal to Wood Epox by Abatron.
3. Epoxy consolidant shall be equal to LiquidWood by Abatron. Other epoxy consolidants must meet the criteria of a final tensile strength approximately equal to the fiber strength of the wood, and a minimum pot life of one hour.

PART 3 - EXECUTION

3.1. STRUCTURAL REPAIRS

- A Disassemble all associated elements as required.
- B Remove architectural millwork by cutting through shaft of nail fasteners. Do not pull nails through; this will damage millwork. Use hacksaw blades mounted in handles intended for that purpose.

3.2 REPAIRS BY FULL REPLACEMENT

- A. Replace deteriorated element in kind as specified.
- B. At masonry bearing points, separate wood from masonry by installing 16 oz. copper flashing beneath wood.
- C. At masonry bearing points, ensure wood is not in contact with masonry. Provide for free air flow at top, sides, and end of wood element.
- D. Reassemble connecting elements.
- E. All structural attachments shall be made in the same manner as originally detailed. In exposed positions, existing connection details shall be copied.
- F. Some new elements will be joined in two or three segments using epoxy joints as detailed to allow the fitting of new elements between fixed elements.

3.3 REPAIRS MADE BY SEGMENTAL INFILL

- A. All structural repairs shall be made in strict accordance with local codes and shall meet or exceed structural requirements for each structural element.
- B. Only elements which have deteriorated through fungal or insect attack shall be repaired by partial replacement.
- C. Elements whose integrity has been compromised by crushing of the wood fiber or shearing shall be considered to be structurally inadequate. This latter condition is not covered within this section.
- D. Replacement wood shall be of the same species and similar grain, free of knots and checks.
- E. Partial replacement in isolated areas, such as beneath bearing points of studs and posts, shall be repaired by the following method:
 - 1. Sharply cut away all deteriorated wood plus a minimum of one inch of sound wood.
 - 2. Leave faces of cut-out area square and parallel. Form the geometry of the joints as detailed on the drawings.
 - 3. Cut replacement block to fit snugly but not tight, with not more than an 1/8" gap at any meeting surface.
 - 4. Ensure that moisture content of both member to be repaired and replacement wood have moisture contents in the range of 8-12 percent.
 - 5. Mix epoxy according to manufacturer's instructions and precautions. Note that once Part A and Part B of epoxies are combined the chemical process by which setting occurs cannot be stopped. Therefore, mix only sufficient epoxy to repair areas that have been prepared.
 - 6. Fully coat all mating surfaces of wood member and repair block.

7. Place block into cut-out area, ensuring that all coated faces are in full contact, with no voids or gaps. Tap block into place and clamp for 48 hours.
 8. Remove excess adhesive from glue line.
 9. Ensure that new area is not disturbed during setting period.
 10. In exposed areas neatly tool adhesive at glue line, being careful to scrape it from adjacent surfaces.
 11. Coordinate repairs with the reinstallation or repair of any iron anchors and straps.
- F. Replacement of sections of wood elements such as end bearing points of beams, tenon joint ends or deteriorated mid-sections of spanning members, shall be repaired as detailed on the drawings, and generally by the following method:
1. All procedures for removing deteriorated wood and installing new wood described above in 3.3 E apply except for the forming of the connector joint.
 2. Replacement sections shall replicate the original area in all dimensions and connection details with associated elements.
 3. Joints shall be cut in the horizontal plane, parallel to the span.
 4. Joints shall be lap type, of the design shown for each repair location, and shall extend a minimum distance equal to twice the member's longest sectional dimension.
 5. The lap ends shall meet at a 45 degree angle.
 6. Bolts with nuts with cut washers, as specified, shall be used to secure the joint after assembly with epoxy adhesive.
 7. Pre-drill all holes and check fit of joints.
 8. Bolt locations shall be as detailed for each location.
 9. Joint assembly and tolerances shall be as described in 3.4 E.
 10. Coordinate repairs with the reinstallation or repair of any iron anchors and straps.

3.4 EXECUTION OF ARCHITECTURAL MILLWORK REPAIRS

- A Millwork shall be repaired by the conservation of existing elements or, if missing, replacement in-kind.
1. Ensure that areas, components, sections, conditions, etc. to receive repairs and patching are suitable and acceptable to the applicable and respective trade agencies before continuing. Notify the Architect of any conditions that may be detrimental to the finished work.
- B Repair of Existing Millwork and Wood Flooring
1. Secure all loose moldings and other millwork by removing built-up caulk, paint, and debris from behind element. Secure with screws or nails as specified. Pre-drill holes for screws, countersink and plug.
 2. All cuts in vertical elements such as corner verticals, architrave backbands, etc. shall be made at a 45 degree angle sloping down and to the exposed surface. Mating surfaces shall be oil primed before assembly.

3. Finished repairs shall blend into and match existing adjacent wood work, including fastening and finishing.
4. Patching and joining to existing work shall be with hairline joints using trained craftsmen who are highly skilled in their respective trades.

C Segmental and Infill Repair of Architectural Millwork

1. The use of epoxy adhesives in performing wood repairs, as described in 3.4 above, shall be used in the repair of architectural millwork.
2. Deteriorated areas of column shafts, capitals and bases, handrails, balusters, doors, sash, window and door sills, brackets, etc., shall be repaired with epoxy joints as described.
3. The exposure to view of millwork requires additional attention to the clean cutting of joints and the finishing of the glue lines.
4. Epoxy adhesive shall not be allowed to cure on adjacent surfaces.
5. In repairing molded or curved surfaces, such as sill nosing, larger wood blocks can be used and molded in-place after the setting of the epoxy. This assures a match in profile between the old and new lines.
6. Generally, the repair of nonstructural millwork with epoxies does not require the use of fasteners. Clamp and allow to set for 48 hours.
7. Small checks, deteriorated areas, or missing features can be filled or formed with an epoxy filler. Wood shaping and cutting tools should be employed.

D Consolidation of Deteriorated Wood

1. Epoxy consolidants designed for the purpose shall be used to consolidate spongy and moderately deteriorated wood.
2. Consolidation shall be used to bind weakened wood fibers of wood elements. Consolidants shall not be used as void fillers.
3. Areas to be consolidated must be dry, with a moisture content of 8-12 percent.
4. If above 12 percent moisture content, protect from moisture and apply low radiant heat or heat from a heat gun. Caution must be exercised to ensure that wood is not charred and that all hazard of fire is avoided.
5. Consolidation occurs principally through absorption through the end grain of the wood. Drill 3/16" or smaller holes in the wood of treatment area across the grain of the wood. Space holes a maximum of 2" apart in all directions.
6. Mix epoxy consolidant according to manufacturer's instructions, precautions, and environmental requirements.
7. Install consolidant in spongy wood and in drilled holes using applicator supplied by manufacturer or plastic squeeze bottles with small diameter nozzles.
8. Do not overfill holes.

9. If consolidant runs from lower drilled holes, checks, or openings, fill these with modeling clay.
10. Consolidation process will require two to five applications of consolidant.
11. Allow consolidant to set between applications, generally equal to its stated pot life.
12. Observe exothermic reaction of epoxy, for this results in the production of heat.
13. Do not reuse applicator bottles from previous application. Allow epoxy to set and remove as a solid.
14. Do not allow epoxy to cure on adjacent surfaces.
15. After consolidation is complete, fill any open access drill holes or checks with epoxy adhesive/filler.

E Replacement Millwork

1. All repair elements and replacement elements shall match the original in joinery detailing of connections, dimensions, and molded profiles.
2. Replacement wood shall be select, free of knots, checks, twists, and warps, and shall be of the same species as the original.
3. No applied beaded or molded edges shall be accepted. All mold edge details shall be molded onto the larger element.
4. Larger elements such as door and window sills, handrails, posts, columns, and turnings shall be produced from single wood sections as was original.
5. Molded profiles shall be taken from unweathered elements that have had all paint carefully removed. See specifications of paint removal.
6. If possible, deliver to the millwork supplier prepared sections or elements of original millwork.
7. Samples of each millwork profile and assembly shall be submitted to the owner for approval prior to running of moldings.
8. All assemblies such as doors, sash, blinds, brackets, balustrades, etc., shall be fully primed with oil primer before assembly, on all surfaces including mortises, tenons, and all ends. The exception to this is where such priming would interfere with the action of the adhesive.
9. All field cuts and assemblies shall be fully primed with oil primer before installation. This applies to all butt and miter joints.

END OF SECTION 06 20 00

SECTION 06 40 14 – EXTERIOR WOOD REPAIR AND REPLACEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following repairing and replacing as required the following:
 - 1. Standing and running trim.
 - 2. Window sills and jambs
 - 3. Wood siding and trim
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 6 Section "Rough Carpentry" for exposed framing and for blocking, shims, and nailers for installing exterior woodwork and work concealed in the walls.
 - 2. Division 9 Section "Painting" for field finishing of installed exterior architectural woodwork.

1.3 DEFINITIONS

- A. Exterior architectural woodwork includes but is not limited to wood blocking, shims, and nailers for installing woodwork items unless concealed within other construction prior to woodwork installation.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each type of product and process specified and incorporated into items of architectural woodwork during fabrication, finishing, and installation.
- C. Wood-preservative-treatment data from chemical treatment manufacturer. Include certification of chemical solution and affirm that it complies with indicated treatment standard.
- D. Shop drawings showing location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 3. Apply AWI Certified Compliance Label to first page of shop drawings.

- E. Shop drawings of louver units and accessories. Include plans, elevations, sections, and details showing profiles, angles, and spacing of louver blades; unit dimensions related to wall openings and construction; free areas for each size indicated; profiles of frames at jambs, heads, and sills; and anchorage details and locations
- F. Samples for verification of the following:
 - 1. Lumber and panel products for shop-applied opaque finish, 8 by 10 inches (200 by 250 mm) for panels and 50 sq. in. (300 sq. cm) for lumber, for each finish system and color, with one-half of exposed surface finished.
- F. Product certificates signed by woodwork manufacturers certifying that their products comply with specified requirements.
- G. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in producing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units without delaying the Work.
- B. Installer Qualifications: Arrange for exterior architectural woodwork installation by a firm that can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this Project.
- C. Single-Source Responsibility for Fabrication and Installation: Engage a qualified woodworking firm to assume undivided responsibility for fabricating and installing woodwork specified in this Section.
- D. Quality Standard: Except as otherwise indicated, comply with the following standard:
 - 1. AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute for grades of exterior architectural woodwork, construction, finishes, and other requirements.
 - a. Provide AWI Certification Labels or Certificates of Compliance indicating that woodwork meets requirements of grades specified.
- E. Mockups: Before beginning any work, perform and build examples/mockups for each form and type of repair, replacement, construction, including wood species, and finish (stain, paint, etc.) to be used in the finished Work. Demonstrate complete removal, repair, and replacement

including aesthetics effects and qualities of materials and execution to be used in the completed Work. Build mockups to comply with the following requirements, using materials indicated for the completed Work:

1. Perform in the location and of the size directed by Architect. The Contractor shall carefully select materials, construction methods, finishes, and installation to be used for mockups and completed Work.
2. Notify the Architect when mockups will be ready for review.
3. Demonstrate the proposed range of aesthetic effects and workmanship, including Show joinery, construction, fastening, hardware, finish, and installation.
4. Obtain Architect's approval of examples/mockups before starting interior woodwork and millwork fabrication. Examples/Mockup will be reviewed for materials, construction, aesthetics, blending with existing construction, contrast in finish and color, and installation, including compliance with Division 06 Section – Carpentry Conservation. .
5. Maintain mockups during construction in an undisturbed condition as a standard for judging and accepting the completed Work. The Architect will determine acceptable aesthetic and construction variances, deviations, and ranges from accepted mockups.
6. If approved mockup does not become part of the completed Work, demolish and remove mockups when directed.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Obtain and comply with woodwork manufacturer's and Installer's coordinated advice for optimum temperature and humidity conditions for woodwork during its storage.
- B. Weather Limitations: Proceed with installation of exterior woodwork only when existing and forecasted weather conditions will permit work to be performed and at least one coat of specified finish to be applied without exposure to rain, snow, or dampness.
- C. Field Measurements: Where woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before fabrication, and show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 1. Verify locations of concealed framing, blocking, and reinforcements that support woodwork by accurate field measurements before being enclosed. Record measurements on final shop drawings.

2. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site and coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions.

1.8 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, reinforcements, and other related units of Work specified in other Sections to ensure that exterior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide materials that comply with requirements of the AWI quality standard Premium Grade for each type of woodwork and quality grade indicated and, where the following products are part of exterior woodwork, with requirements of the referenced product standards that apply to product characteristics indicated:
- B. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," for lumber and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.
 1. Texture: Smooth, flat, tight grain surface that will not telegraph grain through painted finish. Solid lumber stock, finger joints not acceptable. All wood and lumber shall be straight, flat, and true without bows, warps, splinters, cracks, nicks, or gouges.
- C. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
 1. NELMA - Northeastern Lumber Manufacturers Association.
 2. NHLA - National Hardwood Lumber Association.
 3. NLGA - National Lumber Grades Authority.
 4. SPIB - Southern Pine Inspection Bureau.
 5. WCLIB - West Coast Lumber Inspection Bureau.
 6. WWPA - Western Wood Products Association.
- D. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
 1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps entirely and provide certificates of grade compliance issued by inspection agency.

- E. Softwood Plywood: Comply with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood."
- F. Hardwood Plywood: Comply with HPVA HP-1, "Interim Voluntary Standard for Hardwood and Decorative Plywood."

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General:
 - 1. Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWWA C2 (lumber) and AWWA C9 (plywood). Comply with EPA and VOC requirements for treated materials. Use only materials that are approved for use by the applicable governing authorities for the intended application. Preservative materials shall provide performance equal to CCA when used in comparable conditions, locations, and applications. Where CCA is not acceptable to governing authorities, use alternative preservative materials such as ASQ that will provide performance equal to CCA, and that are acceptable to governing authorities.
 - 2. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
 - 3. Obtain lumber only from yards capable of kiln-drying lumber that meets these drying requirements.
 - 4. All lumber with moisture content exceeding 19 percent will be rejected. If this lumber is installed, it shall be removed and replaced with dry lumber at the Contractor's expense.
- B. B. Treat indicated items and the following:
 - 1. Wood in contact with masonry or concrete.
 - 2. Wood members less than 18 inches above grade.
 - 3. Wood directly in contact with earth.
- C. Drying Requirements
 - 1. Prior to sizing and pressure treating lumber, dry to 19 percent.
 - 2. After treatment, kiln-dry lumber and plywood to a maximum moisture content
 - a. Lumber: 19 percent
 - b. Plywood: 15 percent.
- D. Retention Rates. minimum:
 - 1. Above Ground Members: 0.25 lb/cu. ft.
 - 2. Members in contact with ground or freshwater 0.40 lb/cu. ft.
- E. Complete fabrication of treated items before treatment, where possible. If cut, drilled, or scratched, or otherwise abraded after treatment, apply field treatment complying with AWWA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

2.4 INSTALLATION MATERIALS

- A. General: Provide fasteners of size and type indicated and that comply with requirements specified in this Article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.
 - 2. Treated Wood: All fasteners and connectors in contact with treated wood shall be Type 304 stainless steel or hot dipped galvanized per ASTM A153, G185. No exceptions. Mechanically galvanized is not acceptable.
- B. Screws: Select material, type, size, and finish required for each use, nonferrous metal or hot-dip galvanized, unless otherwise indicated. Comply with ASME B18.6.1 for applicable requirements.
 - 1. For metal framing supports, provide screws as recommended by metal-framing manufacturer.
- C. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
- D. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous metal or hot-dip galvanized anchors and inserts, unless otherwise indicated. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors.
- E. Blocking, Shims, and Nailers: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

2.6 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to relative humidity conditions existing during time of fabrication and in installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 - 1. Edges of solid-wood (lumber) members 3/4 inch thick or less: 1/16 inch.
 - 2. Edges of rails and similar members more than 3/4 inch thick: 1/8 inch.
- C. Complete fabrication, including assembly, finishing, and hardware application, before shipment to Project site to maximum extent possible. Disassemble components only as necessary for

shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

- D. Shop-cut openings, to maximum extent possible, to receive hardware, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts and seal edges with a water-resistant coating suitable for exterior applications.

2.7 LUMBER

- A. Quality Standard: Comply with AWI Section 300.
- B. Backout or groove backs of flat trim members, kerf backs of other wide, flat members, except for members with ends exposed in finished work.
- C. Trim, Sills, and Casings: Provide finished lumber and moldings complying with the following requirements including those of the grading agency listed with species:
 - 1. Species: No. 1 heart structural grade California Redwood per the Redwood Inspection Services Standard Specifications for Grades of California Redwood. Structural members.
 - 2. Texture: Smooth tight grain surface. Solid lumber stock, finger joints not acceptable.
- D. Siding: Provide finished lumber and moldings complying with the following requirements including those of the grading agency listed with species:
 - 1. Species: Match existing species.
 - 2. Texture: Smooth tight grain surface. Solid lumber stock, finger joints not acceptable.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.
- B. Deliver concrete inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.
- C. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including back priming and removal of packing.

3.2 INSTALLATION

- A. Quality Standard: Perform repairs and replacement in accordance with Division 06 Section Carpentry Conservations AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Quality Standard: Install woodwork to comply with AWI Section 26 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- C. Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) for plumb and level.
- D. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- E. Back Priming: For all wood materials scheduled to be painted, including treated wood, back prime, including all edges and concealed surfaces, prior to installation. Apply primer to the same specifications as for the exposed surfaces. Treat all cut edges, end cuts, and disturbed surfaces the same way. Wood items shall be completely encapsulated with primer. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to both interior and exterior installations.
- F. Preservative-Treated Lumber: Where cut or drilled in field, treat cut ends with preservative solution used in original treatment by brushing, spraying, dipping, or soaking.
- G. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork.
- H. Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Do not use pieces less than 36 inches long, except where necessary. Stagger joints in adjacent and related members.
 - 1. Install with no more than 1/8 inch in 96-inch variation from a straight line.
- I. Complete the finishing work specified in this Section to the extent not completed at shop or before installation of woodwork. Fill nail holes with matching filler where exposed. Apply specified finish coats to exposed surfaces where only sealer/prime coats were applied in the shop.
- J. Refer to Division 9 Sections for final finishing of installed architectural woodwork.
- K. Siding - The areas of cracks and openings in the existing wood siding should be removed and replaced with comparable wood siding. Refer to Division 06 Section "Carpentry Conservation."

- L. Trim - The areas of dryrot and decay in the fascias, eaves and siding should be repaired and deteriorated wood should be replaced with No. 1 Redwood trim. Refer to Division 06 Section "Carpentry Conservation."
- M. Casings - The rotted and decayed portions of the windowsills and casing should be replaced with a No. 1 Redwood trim. Refer to Division 06 Section "Carpentry Conservation."

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork where possible to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance. Adjust joinery for uniform appearance. Defects include, but are not limited to, the following:
 - 1. Splits
 - 2. Loose
 - 3. Bowed
 - 4. Dented
 - 5. Warped
 - 6. Chipped
 - 7. Cracked
 - 8. Scratched
 - 9. Discolored
 - 10. Open joints
 - 11. Rough finish
 - 12. Uneven Joints
 - 13. Visible hole filler
 - 14. Unmatched materials
 - 15. Raised/Telegraph grain
 - 16. Not level, plumb, or square
 - 17. Fasteners not countersunk and holes filled
 - 18. Other defects objectionable to the Architect
- B. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

3.4 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to fabricator and Installer that ensures that woodwork is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 06 40 14

SECTION 06 65 02 – SIMULATED WOOD RAMP AND PORCH FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes material and installation for the following:
 - 1. Uncovered ramp constructed of composite recycled wood and plastic
 - 2. Porch flooring constructed of PVC composite wood (simulated wood).
 - 3. Hand railing of composite materials.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of factory-fabricated product and process specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.
- C. Samples for verification of the following:
 - 1. Simulated wood products for ramp and porch floor with nonfactory-applied finish, 50 sq. in. for simulated wood.
 - 4. Material test reports from a qualified independent testing agency indicating and interpreting test results relative to compliance of fire-retardant-treated simulated wood products with requirements indicated.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed simulated wood standing and running trim similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- 4. Quality Standards: Materials, joinery, and installation, shall comply with AWI requirements for Premium Grade.

- C. Mockups: Before fabricating and installing ramp and porch floor, build mockups for each form and type of construction, and finish to be used in the finished Work. Demonstrate aesthetic effects and qualities of materials and execution to be used in the completed Work. Build mockups to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in the location and of the size directed by Architect. The Contractor shall carefully select materials, construction methods, finishes, and installation to be used for mockups and completed Work.
 2. Notify the Architect when mockups will be ready for review.
 3. Demonstrate the proposed range of aesthetic effects and workmanship. Show joinery, construction, fastening, hardware, finish, and installation.
 4. Obtain Architect's approval of mockups before starting fabrication. Mockup will be reviewed for materials, construction, contrast in finish and color, and installation.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging and accepting the completed Work. The Architect will determine acceptable aesthetic and construction variances, deviations, and ranges from accepted mockups.
 6. Approved mockup may become a part of the completed construction. If approved mockup does not become part of the completed Work, demolish and remove mockups when directed.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings.
1. Do not let surface temperature of simulated wood to reach exceed manufacturer's recommended temperature. If none recommended, then 140 deg. F.
- B. Do not deliver interior materials until environmental conditions meet requirements specified for installation areas. If materials will be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installing ramp and porch components when existing and forecasted weather conditions will permit work to be performed according to manufacturer's recommendations and warranty requirements and at least one coat of specified finish to be applied without exposure to rain, snow, or dampness.

1.7 WARRANTY

- A. Warrant all components provided by the respective manufacturers against warping, bowing, buckling, cracking, splitting, failure to accept field applied finishes, failure to bond, and dimensional instability greater than specified limits in properties.
- B. Warranty Period:
 - Porch Floor: 25 years
 - Ramp: 25 years
 - Railing: 25 years

PART 2 - PRODUCTS

2.1 PORCH FLOORING MATERIALS

- A. Provide shapes, configurations, sizes, and dimensions required to replace existing porch flooring. Replacement materials shall be Aertis or reviewed substitute. Provide following minimum properties:
 - 1. Density, ASTM D792: 55 gram/cm³
 - 2. Water Absorption, ASTM D570: 0.15%
 - 3. Tensile Strength, ASTM D638: 2256psi
 - 4. Tensile Modulus, ASTM D638: 144,000 psi
 - 5. Flexural Strength, ASTM D790: 3329 psi
 - 6. Nail Holding, ASTM D1761: 36 Lbf/in
 - 7. Screw Holding, ASTM D1761: 680 Lbf/in
 - 8. Staple Holding, ASTM D1761: 180 Lbf/in
 - 9. Gardner Impact, ASTM D4228: 103 in. lbs.
 - 10. Burning Rate, ASTM D635: no burning when flame removed
 - 11. Flame Spread, ASTM E84: 25 Heat Deflection Temp. 264 psi., ASTM D648: 150
 - 12. Oil Canning @140 deg F, ASTM D3679: No distortion
 - 13. Linear Coefficient of Expansion:
 - a. Lengths up To 12 Feet: 1/8 inch
 - b. Lengths Up To 18 Feet: 3/16 inch
- B. Dimensions:
 - 1. Thickness: Match existing
 - 2. Width: Match existing
 - 3. Edge: Tongue and groove.
- C. Trim Profiles: Same material as flooring. Match existing shapes and dimensions.
- D. Finish: as selected by the Architect from the following
 - 1. For prefinished material components, as selected by the Architect from full range of standard and custom colors and sheens. Finish on all sides.
 - 2. For field finish, prepare surfaces for field applied paint.

2.2 RAMP MATERIALS

- A. Provide Shapes, configurations, sizes, and dimensions required to construct ramp as indicated. Materials shall be by Trex Transcend by Trex concealed fastening or a reviewed substitute.
- B. Performance Properties: As published by the manufacturer.
- C. Dimensions:
 - 1. Thickness: As selected by the Architect or 1 inch. Verify with the Architect.
 - 2. Width: As selected by the Architect 5.5 inches. Verify with the Architect
 - 3. Edge: Tongue and groove.
- D. Trim Profiles: Same material as ramp of shapes and dimensions indicated.
- E. Finish: Factory finish all sides. Color as selected by the Architect from full range custom and standard colors and sheens.

2.3 HANDRAIL SYSTEM

- A. Provide Shapes, configurations, sizes, and dimensions required to provide and construct a composite materials handrail system to match existing.
- B. Manufacturer: Subject to general provisions, provide composite handrail system by one of the following manufacturers or a reviewed substitute that matching existing:
 - 1. Certainteed
 - 2. Gossen
 - 3. Trex
- C. Provide top rail, bottom rail, corner posts, line posts, spindles of composite building materials
- D. Fasteners: Concealed, stainless steel of the type, design, and size recommended by the railing manufacturer for members to be fastened together.
- E. Finish: As selected by the Architect from the following
 - 1. For prefinished material components, as selected by the Architect from full range of standard and custom colors and sheens. Finish on all sides.
 - 2. For field finish, prepare surfaces for field applied paint.

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners: Nails, screws, and other anchoring devices of stainless steel of design, type, size, required for intended application for materials being fastened to provide secure attachment, concealed where possible as recommended by the simulated wood manufacturer.. Provide in diameter and lengths recommended by the simulated wood manufacturer for intended purpose.
 - 1. Screws: Course threads.
 - 2. Nails: Non-corrosive, annular threaded.

- B. Sealants: Comply with requirements of Division 7 Section "Joint Sealants" for polyurethane sealant.
- C. Adhesives: As recommended by the respective manufacturers for adhering intended mating surfaces.
- D. Accessories: Provide all necessary accessories and appearances for a complete and functional installation that is acceptable to the Architect.

2.5 FABRICATION

- A. Fabricate ramp, porch flooring, and railing components to dimensions, profiles, and details indicated according to AWI standards for Premium Grade.
 - 1. Back out or kerf backs of the following members, except members with ends exposed in finished work:
 - 2. Ease edges to radius indicated. If not indicated, then as selected by the Architect.
 - 3. Factory machine and prepare all surfaces that are to be bonded with adhesive in the field as required.
 - 4. Sealer/Primer: Where components are to be field finished, factory-apply manufacturer's recommended sealer primer prior to shipping. Primer/sealer shall be suitable for and compatible with the field-applied finish paint. Provide weather and water resistant primer/sealer for exterior installations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting installation and performance of standing and running trim. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Condition trim to average prevailing humidity conditions in installation areas before installation, for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly finished, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.
- B. Install ramp and porch components plumb, level, true, and aligned with adjacent materials. Use concealed shims where required for alignment.
1. Scribe and cut to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 2. Countersink nails, fill surface flush, and sand where face nailing is unavoidable.
 3. Install to tolerance of 1/8 inch in 96 inches for plumb and level. Install adjoining units with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 4. Coordinate with materials and systems in or adjacent to simulated wood. Provide cutouts for mechanical and electrical items that penetrate exposed surfaces of trim and rails.

3.4 INSTALLATION

- A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of simulated wood available. Do not use pieces less than 48 inches long, except where necessary. Stagger joints in adjacent and related sections. Cope at returns and miter at corners to produce tight-fitting, hairline joints with full-and total surface contact throughout length of joint. Use scarf joints for end-to-end joints. Smooth backs of casings, if required, to provide uniform thickness across joints.
1. Install components after adjoining and supporting operations are completed.
 2. Set screw and nails 1/2 inch from edge of composite and simulated wood. Set 16 oc.
 3. If materials crack, drill pilot holes before fastening to prevent splitting
 4. Construct and install ramp and porch assemblies to allow for drainage away from the structure. Standing water adjacent to and away from the structure immediately after a measured rain is unacceptable
 5. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes with non-shrink, paintable polyurethane.
 6. Where composite and simulated wood units are to be bonded with adhesive, ensure that surfaces to be bonded have been factory-machined and are prepared to conditions recommended by the manufacturer.
 7. Install components straight, true, square, and plumb.
 8. Porch and ramp shall not wobble, creak, rattle, squeak, sag, bounce, or deflect when subjected to static or rolling loads.
 9. Railing shall be rigid and secure and not wiggle, wobble, shake or deflect.

3.5 ADJUSTING

- A. Repair damaged or defective construction where possible to eliminate functional or visual defects. Where not possible to repair, replace unsatisfactory and unacceptable construction. Adjust joinery for uniform appearance. Defects include, but are not limited to, the following:
1. Spits
 2. Loose

3. Bowed
4. Dented
5. Warped
6. Chipped
7. Cracked
8. Scratched
9. Discolored
10. Open joints
11. Rough finish
12. Uneven Joints
13. Visible hole filler
14. Unmatched materials
15. Not level, plumb, or square
16. Poor drainage, standing water
17. Adjacent surfaces not flush and even
18. Fasteners not countersunk and holes filled
19. Other defects objectionable to the Architect

3.6 CLEANING

- A. Clean all exposed and semi exposed surfaces.

3.7 PROTECTION

- A. Provide final protection and maintain conditions that ensure trim is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 06 65 02

SECTION 06 82 14 – COMPOSITE COLUMNS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes composite column assemblies consisting of the following components: Capital, shaft, base, plinth of the sizes, shapes, designs, and finishes indicated plus associated flashing.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each type of product and process specified and incorporated during fabrication, finishing, and installation.
- C. Shop drawings showing location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show specific details for attaching the base and capital to their respective supports and substrates. Show type, location, and installation of fasteners and sealants. Show location of drain ports in
- D. Product certificates signed by column manufacturer certifying that their products comply with specified requirements.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced and specializing in producing columns similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units without delaying the Work.
- B. Installer Qualifications: Arrange for installation by a firm that has successful experience in installing columns similar in type and quality to those required for this Project.
- C. Single-Source Responsibility for Fabrication and Installation: Engage a qualified firm to assume undivided responsibility for fabricating and installing columns specified in this Section.
- D. Substitute Requests For A Specified Entity
 1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without “Or equal” or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More

competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.

- a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
 7. The manufacturer’s published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
 8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item and the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer’s published data for performance criteria.

- f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
 - a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect columns during transit, delivery, storage, and handling to prevent damage, spoilage, and deterioration.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Obtain and comply with column manufacturer's and Installer's coordinated advice for optimum temperature and humidity conditions for materials and components during its storage.
- B. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions will permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
- C. Field Measurements: Where columns are indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before fabrication, and show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 1. Verify locations of concealed framing, blocking, and reinforcements that support columns by accurate field measurements before being enclosed. Record measurements on final shop drawings.
 2. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating columns without field measurements. Provide allowance for trimming at site and coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions.

1.7 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, reinforcements, and other related units of Work specified in other Sections to ensure that columns can be supported and installed as indicated.

PART 2 - PRODUCTS

2-1 COLUMNS

- A. Composite column assemblies include plinth, base, column shaft, and flashing as provided by Pacific Columns or a reviewed substitute.
- B. Manufacturer's Product Series: Endura Stone or a reviewed substitute.
- C. Materials
 1. Construction: Composite
 2. Resins: Class A formulated for applications requiring ASTM E84 Class 1 flame spread rating without the use of fillers or antimony trioxide.
 3. Reinforcement Anchoring Clips, Brackets, and Fasteners: Stainless steel as recommended by the manufacturer.
 4. Sealant: Silicone as recommended by the column manufacturer for intended application and will provide a minimum of 25 years service.
 5. Epoxy Cement: As recommended by the column manufacturer.
 6. Screws: Stainless steel of size and type recommended by the manufacturer to fasten the column to the supports.
 7. Patching Compound: As recommended by the manufacturer.
- D. Dimensional Tolerances: Manufacturer's standard or the following whichever is more stringent:
 1. Length of 10 feet or Less: Plus or minus 1/4 inch
 2. Length of 10 feet to 20 feet: Plus or minus 3/8 inch
 3. Out Of Square: 1/8 inch per 6 feet.
 4. Warpage Or Bowing: Plus or minus 1/16 inch per foot.
- E. Properties: Manufacturer's standard or the following, whichever is more stringent:
 1. Flexural Strength, @ 77 deg. F.: 20,000 psi
 2. Flexural Modulus, @ 77 deg. F.: 700,000 psi
 3. Tensile Strength: @ 77 deg. F.: 18,000 psi
 4. Tensile Modulus: @ 77 deg. F.: 850,000 psi
 5. Barcol Hardness: 55
 6. Glass Content 0/0: 29.5 percent
 7. Compressive Strength: 20,000 psi
 8. Water Absorption: (in./in./ft.): 0.000012
 9. Flammability (1/8 inch glass mat laminate)

- a. ASTM E84 Tunnel Test: 10 (unfilled)
 - b. HLT-15 Rating: 100
 - c. ASTM D635-74: AEB less than 1.0 cm, ATB less than 5 seconds
 - d. ASTM D2863-74 Oxygen Index: 36.5
10. Field paintable with 100 percent acrylic paint.
- F Construction: Construct all column components of weatherproof materials capable of withstanding a deep southern climate, including high humidity, wind-driven rain, hot sun, freeze-thaw cycles, snow, sleet, and ice. Provide with a consistent and uniform texture that when field-painted, all components will have the same finish.
1. Capital: As selected by the Architect to match existing. Flash with a permanent and durable flashing whose water runoff will not stain, streak, or discolor the finish on any portion of the column. Flashing that stains, streaks, or discolors any portion of the column will be unacceptable and will be removed and replaced with a non-staining flashing at no additional cost to the Owner.
 2. Shaft: Round, plain, tapered smooth finish
 3. Base: As selected by the Architect to match existing.
 4. Plinth: Provide in manufacturer's design and proportions for indicated diameter of shaft as selected by the Architect for standard and custom designs.
 5. Stand: Of the size, design and material recommended by the column manufacturer to support the weight of the shaft and loads indicated on the Drawings. Proportion to size of the shaft. Construct
- H. Warranty: 1 year against cracking, warping, delaminating, deteriorating, joint separation, and fading. 3-year warranty against staining, streaking, or discoloring by runoff from flashing.
- I. Finish: Full prepared for field-applied finish.

2.2 INSTALLATION MATERIALS

- A. Blocking, Shims, and Nailers: As recommended by the manufacturer. If wood is recommended, use softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
- B. Screws: Select material, type, size, and finish required for each use, stainless steel or nonferrous metal, unless otherwise indicated. Comply with ASME B18.6.1 for applicable requirements.
1. For metal framing supports, provide screws as recommended by metal-framing manufacturer.
- C. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
1. Hot-dip galvanized nails.
- D. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous metal or hot-dip galvanized anchors and inserts, unless

otherwise indicated. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors.

- E. Flashing: Permanent compatible with the column materials and designs and recommended by the column manufacturer for intended design.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition columns to average prevailing temperature conditions in installation areas before installation.
- B. Deliver inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.
- C. Before installing columns, examine individual column components for completion, defects, missing components, and missing parts.

3.2 INSTALLATION

- A. Install columns according to the manufacturer's instructions, reviewed shop drawings, and as follows:
 - 1. Install columns plumb, level, true, and straight with no distortions. Shim as require with concealed shims. Install to a tolerance of 1/8 inch in 96 inches for plumb and level.
 - 2. Check that the substrate is level and true. Report unsuitable conditions to the Contractor.
 - 3. Only trim from the bottom of the shaft.
 - 4. Check for level and plumb as each component is attached and installed.
 - 5. Flash as recommended by the column manufacturer. No flashing shall be visible.
 - 6. Prepare for field painting with acrylic paint as specified in Division 09 Section "Painting"

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective surfaces to eliminate functional and visual defects; where not possible to repair, replace defective component. Adjust joinery for uniform appearance.

- B. Immediately after installation, repair all nicks and fill all screw holes as recommend by the column manufacturer.
- C. Clean exposed and semiexposed surfaces.

3.4 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to fabricator and Installer that ensures that columns are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 06 82 14

SECTION 07 31 13 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes asphalt shingles for steep roofs.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 6 Section "Rough Carpentry" for wood sheathing and framing.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.
- C. Samples for verification in the form of 2 full-size units of each type of asphalt shingle indicated showing the full range of variations expected in these characteristics.
- D. Shop Drawings
 - 1. Approval of Vented Insulation System: Submit a letter of approval for the selected vented insulation system from the shingle manufacturer with the shop drawings.
 - 2. Fastening Pattern:
 - a. Show intended fastening pattern for shingles as recommended by the shingle manufacture and that complies with applicable governing authorities.
 - b. Show assembly and fastening pattern of the vented insulation system. Where a field assembled system is used, show fastening of the both insulation and the nailable shingle deck.
 - 3. Third Party Agency: If the shingle manufacturer will not comply with providing all of the specified or requested inspection requirements, submit the name of the third party inspection

agency to be used on this project. Shop drawings and submittals without this submittal will not be reviewed.

- E. Certification: Letter from shingle manufacturer stating that specified deck construction is acceptable to the shingle manufacturer and that the specified shingle warranty will be issued.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications Criteria: As an absolute minimum, all roofing contractors/installers shall meet the following criteria and shall acknowledge compliance by completing the Roofing Contractor's Certification Statement at the end of this specification and including it with the Bid. Qualification Criteria includes, but is not limited to:

1. Be a roofing contractor with 7 continuous years experience specializing in the specified roofing system.
2. Have operated under the same name for at least 5 years.
3. Be certified by the roofing system manufacturer prior to date of advertisement for bids. Provide copy of certification for Architect prior to awarding roofing work. Obtain written certification from manufacturer of roofing system certifying that Installer is approved by manufacturer to install specified roofing system. Provide copy of certification for Architect prior to awarding roofing work. Installer shall have been trained, qualified, certified, and approved by the manufacturer prior to the date of Advertisement or Invitation for Bids for this project.
4. Presently have the staff and equipment on board to perform the contracted work.
5. Have not been refused a bond in the last 5 years
6. Be able to self-perform all work described under this contract with own employees without sub-contracting. For the purpose of this Contract, the installers own employees are considered employees for which the installer contributes directly to and is directly financially responsible for the following employment expenses:
 - a. All Federal, State and Local Taxes
 - b. Social Security
 - c. Insurance
 - d. Workers Compensation
 - e. Holidays
 - f. Vacations
 - g. Sick Time
 - h. Retirement
7. Never have had a roofing system manufacturer's certification revoked because of unsatisfactory performance?

8. Have completed at least 80% of projects on time and under budget
 9. Be able to respond within 24 hours of notification by the Owner.
 10. Completed at least 5 projects of comparable size and complexity within the last year.
 11. Have not, under this name or any other name, ever filed for protection under either Chapter 7 or 11 of the US Bankruptcy Laws within last 7 years.
 12. Be able to prepare satisfactory and acceptable shop drawings.
 13. Have verifiable means to provide necessary funds to honor contractor's 2-year warranty.
 14. Be able to maintain a full-time non-working supervisor/foreman on the job site during times that roofing work is in progress and who is experienced in installing roofing systems similar to type and scope required for this Project.
 15. Be able to maintain a full-time supervisor/foreman who is on job site during times that roofing work is in progress and who is experienced in installing roofing systems similar to type and scope required for this Project.
 16. The subcontractor that is contractually bound to the General Contractor shall not act as a broker, shall perform all work with its own labor forces, and shall not subcontract any portion of the Work to another entity.
- B. Fire-Test-Response Classification: Where products with a fire-test-response classification are specified, provide asphalt shingles identical to those tested according to ASTM E 108 or UL 790 and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify each bundle of asphalt shingles with appropriate markings indicating fire-test-response classification of applicable testing and inspecting agency.
- C. Manufacturer Qualifications:
1. Shingle manufacturer shall have roof systems of the type specified currently in service for at least as long as the specified warranty period or be able to provide roof that the shingles will last for the warranty period.
 3. Because of extended warranty periods associated with roof products, the shingle manufacture or name that appears on the packaging shall not have filed for protection under the provisions of either Chapter 7 or Chapter 11 bankruptcy laws during the last ten years.
- D. Wind-Resistance-Test Characteristics: Where wind-resistant asphalt shingles are indicated, provide products identical to those tested according to ASTM D 3161 or UL 997 and passed. Identify each bundle of asphalt shingles with appropriate markings of applicable testing and inspecting agency.

- E. UL and FM Listing:
1. Provide labeled materials that have been tested and listed by UL in "Building Materials Directory" and in FM Approval Guide or by other nationally recognized testing laboratory for Class A rated materials/system.
 2. When specified, provide labeled materials that have been tested and listed by in FM Approval Guide or by other nationally recognized testing laboratory for Class A rated materials/system.
 2. Provide factory attached UL and FM labels on all products and materials that have been specified to be produced under these labels. Products and materials without these labels will not be accepted.
- F. Periodic Inspections By Shingle Manufacturer's Representative: A technical representative (not a sales representative) of the shingle manufacturer shall make periodic visits to the site to inspect all shingles in-place and that are being installed. The Contractor shall ensure that the shingle manufacturer's representative has a copy of the project specifications, including all modifications prior to the representative making a visit. As a minimum, this representative shall:
1. Be on-site at startup to ensure that the roofing contractor fully understands the shingle system and all components of the shingle system, including the substrate, being installed, the specifications, and the manufacturer's requirements.
 2. Make at least one inspection per week during installation.
 3. Inspect not only for compliance with the manufacturer's requirements but also for compliance with the project specifications where specification requirements are more stringent than the manufacture's requirements.
 4. Report all deviations from both manufacturer's requirements and from the specifications and defective work.
 5. Submit a record of each visit and a copy of each inspection report to the Architect within 2 days of the visit. Telephone reports shall be followed up in writing. Failure to submit copies of each required inspection may be interpreted as having not completed the inspections.
 6. If the roofing crew continues to repeat the same installation error or errors after having been reminded of that error twice, then the General Contractor may be requested to require that the roofing contractor replace that roofing crew.
- G. If the shingle manufacturer's technical representative fails to comply or the shingle manufacturer does not provide on-site technical support or inspections, then the Contractor shall provide for independent third party inspection as follows:
1. Periodic Inspections By Shingle Manufacturer's Third Party Representative: The Contractor shall provide and pay for a qualified third-party inspector who shall inspect the installation of the shingles system, including vented insulation, and related materials during the following listed progress stages. The third party inspector shall be a technical specialist that specializes in specified roof systems and shall not be an employee or representative of the shingle manufacturer, the Contractor, or the installer. This third party inspector shall also be a recognized and current member of RCI (Roof Construction Institute) or IRWC (Institute of Roofing and Waterproofing Construction): As a minimum, this representative shall:

- a. Be on-site at startup to ensure that the roofing contractor fully understands the roofing system being installed, the specifications, and the manufacturer's requirements.
 - b. Approve the mockup
 - c. Make at least weekly inspections during installation.
 - d. Inspect not only for compliance with the manufacturer's requirements but also for compliance with the project specifications where specification requirements are more stringent than the manufacture's requirements.
 - e. Report all deviations from both manufacturer's requirements and from the specifications and defective work.
 - f. Submit a record of each visit and a copy of each inspection report, including photos of progress and non-conforming installation, to the Architect within 2 days of the visit. Telephone reports shall be followed up in writing.
 - g. If the roofing crew continues to repeat the same installation error or errors after having been reminded of that error twice, then the General Contractor may be requested require that the roofing contractor replace that roofing crew.
- H. The Owner may, at his expense and at any time during installation, elect to have an independent observer present during installation. This observer will record and report to Owner all deviations from Contract Documents and job progress. This observer would not have the authority to change Contract Documents, direct work, approve shop drawings, or stop work. If this observer determines that the shingles or the installation are not in compliance with the Contract Documents, then the Contractor shall be responsible for all previous inspection costs and for all costs associated with correcting non-conforming materials and work and for re-inspection.
- I. Mockups: Before installing shingles, build mockups for each form and type of fabrication (including but not limited to shingles and fastening , to be used in the completed work. Demonstrate aesthetic effects and qualities of materials and execution to be used in the completed Work. Install mockups to comply with the following requirements, using materials indicated for the completed Work:
1. Install mockups in the location and of the size directed by Architect. The Contractor shall carefully select materials, installation methods, finishes, to be used for mockups and completed Work.
 2. Notify the Architect when mockups will be ready for review.
 3. Demonstrate the proposed range of aesthetic effects and workmanship, including, roof connections, hips, valleys, ridges, underlayment, fastening, flashing, sealant application.
 4. Obtain Architect's approval of mockups before starting interior woodwork and millwork fabrication. Mockup will be reviewed for materials, construction, contrast in finish and color, and installation.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging and accepting the completed Work. The Architect will determine acceptable aesthetic and construction variances, deviations, and ranges from accepted mockups.
 6. If approved mockup does not become part of the completed Work, demolish and remove mockups when directed.

- J. Preapplication Roofing Conference: Approximately 2 weeks prior to scheduled commencement of built-up roofing installation and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing that must precede or follow roofing work--including mechanical work, Architect, Owner, roofing system manufacturer's representative, and other representatives directly concerned with work performance, including Owner's insurers, test agencies, and governing authorities, where applicable.
1. Review foreseeable methods and procedures related to roofing work, including, but not necessarily limited to, the following:
 - a. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
 - b. Review structural loading limitations of steel deck and inspect deck for loss of flatness and for required mechanical fastening.
 - c. Review roofing system requirements: drawings, specifications, and other contract documents.
 - d. Review required submittals, both complete and incomplete.
 - e. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - f. Review required inspection, testing, certifying, and material use accounting procedures.
 - g. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing, if it is not a mandatory requirement.
 - h. Review procedures and capabilities for staging materials to be installed to eliminate the need to move materials from the staging point to the point of installation. Transversing completed roofing is not recommended and shall only be done when materials cannot be stage in a way or location to prevent it.
 2. Record (Contractor) discussions of conference, including decisions and agreements or disagreements reached, and furnish a copy for each attendee. If substantial disagreements exist at the conclusion of the conference, determine how disagreements will be resolved and set a date for reconvening the conference.

- K. Reference Publications: Comply with applicable shingle provisions in the current edition of the NRCA Roofing and Waterproofing Manual for materials and installation.
- L. Substitute Requests For A Specified Entity
1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without "Or equal" or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers ("Better". "Cheaper". "More competitive", etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.

- a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
7. The manufacturer's published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item and the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the

following requirements. Requests without the signature of a responsible person will be rejected.

- a. That the specifications have been read and are understood,
- b. That the entity being submitted meets or exceeds all provisions of the specifications,
- c. That all submitted information is true and accurate,
- d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
- e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.
- B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Store roll goods on end. Comply with manufacturer's recommendations for job-site storage, handling, and protection.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installing asphalt shingles only when existing and forecasted weather conditions will permit work to be performed according to manufacturers' recommendations and warranty requirements, and when substrate is completely dry.

1.7 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a special written warranty signed by manufacturer agreeing to repair or replace asphalt shingles that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, deformation, curling, buckling, or deterioration of asphalt shingles beyond normal weathering.
 1. Warranty Period: Begins on date of Substantial Completion as stated for the specified shingles listed under Products and runs continuously uninterrupted for the number of years stated in the shingle description.

2. MANUFACTURER'S WARRANTY SHALL NOT REQUIRE THE OWNER'S SIGNATURE TO BECOME EFFECTIVE. WARRANTIES THAT REQUIRE THE OWNER'S SIGNATURE ARE NOT ACCEPTABLE AND WILL BE REJECTED.
 3. When the warranty requires the Owner's signature, the roof system manufacturer shall issue a letter stating that the warranty will not null, void, reduce, or infringe any other rights the Owner may enjoy under provisions of the Universal Commercial Code or the Magnuson-Moss Act. Submit a copy of this letter with the warranty with the Shop Drawings
- C. The Owner's existing roof is under the roof manufacturer's warranty. All work performed under this contract shall be in compliance with the requirements of manufacturer of the existing roof to maintain all provisions of the existing warranty. If any provisions of the existing warranty are reduced or voided, then the Contractor shall assume full liability for restoring the existing warranty to its status prior to execution of the Contract. If the warranty cannot be restored, the Contractor shall assume full liability for all provisions of the original warranty for the balance of the warranty period.
- M. Infrared and Thermal Imaging Inspection
1. If Owner or Architect suspects that damp or wet materials were installed or improper installation procedures were used, a nondestruct infrared thermal imaging moisture inspection and survey will be requested by Owner for all or any portion of the completed roof. If the inspection reveals damp or wet materials in any area inspected, the roofing contractor shall replace with dry materials, leave completed roofing in a dry and watertight condition, and pay for costs of this testing including areas found to be dry and acceptable and for all subsequent testing, infrared and other related or required tests and material replacement until all tests indicate that the entire roof system is dry. If initial test reveals dry materials, cost of testing shall be paid for by Owner. This test can be requested to be performed during roof construction or after the building is in the dry and the interior is acclimated to normal HVAC operating conditions.
 2. Should infrared inspection indicate moisture, samples from the suspected area shall be removed and tested for actual moisture content using oven loss method for insulation, and Dean and Stark method for the membrane. Moisture contents shall not exceed levels recommended by NRCA. If there are no recommended NRCA levels, then the following moisture levels shall govern:
 - a. Roof membrane: 0.2 percent moisture (excluding aggregate surfacing)
 - b. Polyisocyanurate insulation: 9 percent
 - c. Fiberglass insulation: 3 percent

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.
 - 1. Furnish 1 square coverage of asphalt shingles, identical to those to be installed, in unbroken bundles.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide asphalt shingles produced by one of the following:
 - 1. Shingles
 - a. (The) Celotex Corporation.
 - b. CertainTeed Corporation.
 - c. Elk Corporation of America.
 - d. GAF Building Materials Corporation.
 - e. Georgia-Pacific Corp.
 - f. Owens-Corning Fiberglas Corp.
 - 2. Ridge Vents: Ridge Vents: Acceptable to the shingle manufacturer to qualify for full specified warranty.
 - a. Ridge Filter Shinglevent; Air Vent, Inc.
 - b. Ridge Filtervent; Air Vent, Inc. (for Class A).
 - c. Cobra Ridge Vent; GAF Building Materials Corporation.
 - d. Roll Vent; Obdyke: Benjamin Obdyke, Inc.
 - e. Trimline; Trimline Roof Ventilation Systems.

2.2 ASPHALT SHINGLES

- A. Architectural Shingles: high profile Duration AR by Owens Corning or equivalent by one of the listed manufacturers.
 - 1. Colors, Blends, and Patterns: Color shall be as selected by the Architect from manufacturer's full range of colors and styles. Final approval by Owner after reviewing sample.
 - 2. Shingles: Laminated fiberglass self-sealing, architectural shingles. Provide with factory-applied fungus and algae resistant treatment equal to 3-M Algae Block, complying with the following requirements:
 - a. Warranty: Performance: 30 years; Stain Resistance: 10 years
 - a. Wind Resistance (Includes hip, ridge, cap, and valley shingles)

- ASTM D3161, Type 1, 110 mph
 - UL 997, 110 mph
 - b. Impact Resistance: (Includes hip, ridge, cap, and valley shingles)
 - ASTM D3018
 - UL 2218 Class 4 impact resistance
 - c. Fire Resistance (Includes hip, ridge, cap, and valley shingles)
 - ASTM E108, Class A
 - UL 790 Class A
 - d. ASTM D3462
- B. Starter Strips for Eaves and Rakes: As recommended and provided by the manufacture that provides the shingles and that meet manufacturer's requirements for specified warranty. Materials from manufacturers other than the manufacturer of the installed shingles are unacceptable.
- C. Hip and Ridge Shingles: Manufacturer's factory-precut units to match asphalt shingles and that meet manufacturer's requirements for specified warranty. Shingles shall meet same warranty and wind requirements as shingles used for the field. Materials from manufacturers other than the manufacturer of the installed shingles are unacceptable. Hip and Ridge shingle to match field shingles. Provide with manufacture's stain resistant treatment to inhibit staining form mold, mildew, and algae.

2.3 METAL TRIM AND FLASHING

- A. Provide only flashings, including roof edges, copings, fascia clips and retaining pieces that have been designed, fabricated, tested, and installed to comply with the following standards, test methods, and requirements:
1. FM requirements for specified Wind Uplift Classification
 2. ANSI/SPRI-ES-1 for specified wind uplift. Submit Certificate of Compliance.
 3. ANSI/ASCE-7-02
- B. Sheet Metal Materials: Furnish the following sheet metal materials:
1. Aluminum Sheets: ASTM B 209 alloy 3003 H14 with mill finish, minimum 0.032 inch thick, unless otherwise indicated.
- C. Metal Drip Edge: Brake-formed sheet metal with at least a 2-inch deck flange and a 1-1/2-inch fascia flange with a 3/8-inch drip at lower edge. Furnish the following material in lengths of 8 or 10 feet
1. Material: Aluminum sheets.

- D. Vent Pipe Flashing: Lead conforming to ASTM B 749, Type L51121, at least 1/16 inch thick, unless otherwise indicated. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof extending at least 4 inches from pipe onto roof.

2.4 ACCESSORIES

A. Underlayment

1. Peel and Stick: Peel and Stick: Material shall as, a minimum, have the following listed properties and shall be recommended and approved by the roof covering manufacturer. Following criteria is based on Polystick MTS by Polyglass. Products by one of the other manufacturers that meet the following criteria may be submitted for review.
 - a. Complies with ASTM D1970 for sealability and self-adherence
 - b. Can remain uncovered for up to 180 days without damage.
 - c. Have a smooth slip resistant and nonabrasive surface that will not damage the roof deck.
 - d. Be high temperature resistant with a minimum softening temperature of 265 deg. F.
 - f. Be designed for and be suitable for the climate of installation.
 - g. Be suitable for use under the intended roof coverings.
 - h. Be compatible with and not be detrimental to the roof covering or be adversely affected by the roof covering.
2. Adhesive and Tape: As recommended by the underlayment manufacturers.
3. Acceptable manufacturer are one of the following or reviewed substitute:
 - a. Andek Corporation
 - b. Atlas Roofing Corp.
 - c. Certainteed
 - d. Tamko
 - e. W.R. Grace

- B. Asphalt Plastic Cement: Nonasbestos fibrated asphalt cement, complying with ASTM D 4586.

- C. Nails: Comply with ASTM F1667, Type 1, Style 20. Aluminum or hot-dip galvanized steel; 11 gauge (0.105 inch or 12 gauge (0.120 inch) diameter barbed shank, sharp-pointed, roofing nails. Heads shall be low profile, flat, and smooth with a minimum 3/8-inch-diameter head. Nail length shall be sufficient to penetrate all layers of roofing materials, including multiple layers in valleys, and then penetrate in 3/4 inch into solid decking or at least 1/8 inch through plywood sheathing.

- D. Ridge Vent: High-density polypropylene, nonwoven modified polyester, or other UV-stabilized plastic designed to be installed under asphalt shingles at ridge.

1. Where nails are in contact with flashing, prevent galvanic action by providing nails made from the same metal as that of the flashing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate for compliance with requirements for substrates, installation tolerances, and other conditions affecting performance of asphalt shingles. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with noncorrosive roofing nails.
- B. Coordinate installation with wood trim, flashings and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and are securely fastened against movement.

3.3 INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
- B. Underlayment
 1. General: Lay all underlayment in shingle fashion and in as many layers as necessary to comply with the shingle manufacturer's and NRCA requirements for each roof slope of this project. Unless required otherwise by the manufacturer, as a minimum, install underlayment as follows:
 - a. Slopes 3.5 in 12 or greater: Install underlayment in 1 layer.
 - b. Slopes Less than 3.5 in 12: Install underlayment in 2 layers.
 2. Self-Adhering
 - a. Install at ridge vents and around the entire perimeter of the building, extending from the eaves up to a point 2 feet inside of the exterior wall of the building.
 - b. Install in all valleys. At valleys, center full-width roll and press in place, working from the center of the valley outward in each direction. Apply membrane starting at the low point and working upwards. Lap seams with flow of water.
 - c. Form side laps a minimum of 3 ½-inches and end laps 6 inches.

- d. Remove all wrinkles and gaps so that underlayment lays smooth and even.
 - E. Flashing: Form rain diverter as recommended by SMACNA. Install rain diverter as indicated and according to details and recommendations of the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual."
 - F. Install asphalt shingles, beginning at roof's lower edge, with a starter strip. Fasten asphalt shingles in the desired weather exposure pattern; use number of fasteners per shingle as recommended by manufacturer. Use vertical and horizontal chalk lines to ensure straight coursing.
 1. Cut and fit asphalt shingles at ridges, and edges to provide maximum weather protection. Provide same weather exposure at ridges as specified for roof. Lap asphalt shingles at ridges to shed water away from direction of prevailing wind.
 2. Use fasteners at ridges of sufficient length to penetrate sheathing as specified.
 3. Pattern: 1/2 shingle spacing offset at succeeding courses.
 4. Nailing
 - a. Set nails in a quantity, pattern, and location recommended by the shingle manufacturer to meet wind uplift requirements.
 - b. Set nails flush with shingle surfaces without crushing, cracking, or otherwise damaging the shingles.
 - c. Drive nails true so that the nails head does not enter the shingle at an angle.
 - d. Seat all nails so that they do not rise up to puncture the overlapping shingle.
 - e. Remove all untrue or improperly seated nails, seal all nail holes with roofing cement, and set a true nail.
 - f. For all installations in a coastal environment or for all slopes 12/12 (45 deg.) and greater, use 6 nails per full width shingle and then manually seal (hand tab) with asphalt flashing cement.
 - G. Ridge Vents: Install ridge vents according to manufacturer's instructions.
 - H. Valleys: Form closed valleys as follows (open valleys are not acceptable unless approved by the Architect).
 1. Comply with NRCA recommendations for closed valley construction.
 2. Beginning at the eave (low portion of the roof) and proceeding to the ridge, line valleys with 2 layers of full-width peel and stick underlayment. Lap seams with flow of water.
 3. Bring shingles from each side of valley across the valley to opposite side of valley.
 4. Cut shingles in a straight line parallel to the valley and 2 inches off center,
- 3.4 ADJUSTING
- A. Replace damaged materials installed under this Section with new materials that meet specified requirements.

- B. During routine observations, if the appearance of installed work suggests, or the Architect suspects that defective materials were installed or that materials were not installed according to the specifications, the roofing contractor will be required to perform the required procedures to expose suspected materials for examination. Conforming to this requirement will be at no additional cost to the Owner. This requirement also includes, but is not limited to removing necessary materials to expose questionable elements, making satisfactory repairs, and restoring disturbed areas to a satisfactory condition.

3.5 CLEANUP

- A. Daily: Comply with the following on a daily basis; no exceptions:
1. Do not allow trash, debris, waste, defective materials, and unused materials, equipment and tools to collect on the roof. Remove these items from the roof daily, and dispose of in approved manner and container.
 2. Keep work area clean and free of clutter.
 3. Do not stage materials, tools, or equipment on new shingles. Comply with provisions under Product Handling and Storage in Part 1 of this specification.
 4. Secure all materials, equipment, and tools to prevent movement during windy conditions.
 5. Cover all materials, equipment, and tools completely at the end of each day to prevent water entry and so that covers will not loosen or separate during windy conditions.
 6. Promptly remove all unused or unneeded sharp or pointed objects, including sheet metal, that may puncture roof membrane from the roof.
 7. Keep all mechanical fasteners, including screws and nails, in rigid storage containers until ready for use. Put all used or defective mechanical fasteners in a designated rigid container that is clearly marked, SCRAP. Do not allow used or defective fasteners to mix with new fasteners.
 8. Correct all defects not corrected during normal roofing operations by end of each work day.
 9. Ensure that all downspouts are unclogged.
- B. Completion Of Roofing Operations: Comply with the following at the completion of roofing operations; no exceptions:
1. Remove all trash, debris, waste, defective materials, and unused materials, equipment and tools, resulting from these roofing operations, from the roof and off the site. Dispose of in approved manner and container.
 2. Broom clean the new roof. Use broom with soft bristles.
 3. Clean and restore all surfaces, damaged or disturbed during roofing operations, to the original preroofing operations conditions and to the satisfaction of the Owner.
 4. Remove roofing cement from surfaces other than those requiring roofing cement.
 5. Where landscaping has been damaged or disturbed, remove all ruts and depressions in landscaping, smooth repaired areas, plant grass to match existing, and replace shrubbery, ground cover, and trees to the original preroofing operations conditions and to the satisfaction of the Owner.
 6. Ensure that all roof drains and downspouts are unclogged.

ROOFING CONTRACTOR'S
 CERTIFICATION STATEMENT

Project Name?:

Comm. No.?:

Contractor's Name?

Address?

Telephone?:

Fax?:

E-mail?

It is understood that the person initializing each qualification criteria and signing this form is an authorized representative of the roofing contractor named above and certifies that this roofing contractor meets all qualification criteria stipulated in the specifications. The same person must initial the qualification criteria and sign this statement.

Qualification Criteria No. from 1.4A in Specification 07 31 13	Contractor Meets Criteria (Initials)	Supporting Information Requested From the Contractor by the Owner
1		
2		
3		Provide manufacturer's dated certification
4		
5		Provide name of present bonding agent
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

END OF SECTION 07 31 13

ASPHALT SHINGLES

07 31 13 - 17

SECTION 07 62 03 - SHEET METAL FLASHING AND TRIM, ALUMINUM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes sheet metal flashing and trim in the following categories not provided under Division 07 Section Standing Seam Metal Roof.
 - 1. Exposed trim and fascia.
 - 2. Metal flashing.
 - 3. Gutters and downspouts
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 07 Section "Joint Sealants" for elastomeric sealants.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.
- B. Provide only flashings, including roof edges, copings, fascia, clips, and retainer pieces that have been designed, fabricated installed, and satisfactorily tested as a system to comply with the following standards, test methods, and requirements:
 - 1. FM requirements for specified Wind Uplift Classification. Submit certificate of Compliance.
 - 2. ANSI/SPRI-ES-1 for specified wind uplift. All sheet metal edge fabrications provided for this project shall comply with and meet all requirements for design, testing, and installation of the sheet metal. Submit Certification that all edge sheet metal to be supplied for this project has been designed and tested to specified wind loads and that the fabricator and installer meet the applicable ANSI/SPRI ES-1 requirements for fabrication and installation.
 - 3. ANSI/ASCE-7-02

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data including manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.
- C. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.
 - 1. Include a Certification that sheet metal flashing meets specified FM and IBC 2006 requirements.
- D. Samples of sheet metal flashing, trim, and accessory items, in the specified finish. Where finish involves normal color and texture variations, include Sample sets composed of 2 or more units showing the full range of variations expected.
 - 1. 8-inch-square Samples of specified sheet materials to be exposed as finished surfaces.
 - 2. 12-inch-long Samples of factory-fabricated products exposed as finished Work. Provide complete with specified factory finish.
 - 3. Full width, 12 inch long soffit vent.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. General Compliance Requirements
 - 1. All roof penetrations and flashing shall comply with NRCA Roofing and Waterproofing Manual, Fifth Edition, Construction Details and with the membrane manufacturer's requirements. In the event of conflict between the manufacture and the NRCA, coordinate with the manufacture to ensure no provision in the manufacturer's warranty is compromised.
 - 2. All sheet metal details shall comply with SMACNA Architectural Sheet Metal Manual, Fifth Edition.
 - 3. Maintain a minimum distance of 12 inches between all penetrations and terminations.
 - 4. Top of all flashing shall be a minimum of 8 inches above finished roof.
 - 5. Use round shape to construct equipment supports.
 - 6. Pitch Pans: Avoid using pitch pans when possible. When pitch pan cannot be avoided or eliminated, and preferred flashing methods utilized, ensure pitch pan is a preformed pan

with a minimum of 4 inch height and with 2 inches clearance on all sides of the penetration. Fill bottom 1/3 of pan with non-shrink grout and the remainder of the pan with pourable sealer. Slope sealer to the drain. Install a metal umbrella cap.

7. Equipment supports shall be a minimum of 14 inches and not less than shown in the following table. These minimum dimensions are applicable to the end of the equipment support on the high side of the slope.

WIDTH of EQUIPMENT	HEIGHT OF LEGS (round pipe preferred)
Up to 25 inches	14 inches
25-37 inches	18 inches
27-49 inches	24 inches
49-61 inches	30 inches
61 inches and wider	48 inches

- C. Mockups: Before installing sheet metal work, build mockups for each form and type of fabrication (including but not limited to gutters, downspouts, flashing, fascia, trim, etc.), and finish to be used in the completed work. Demonstrate aesthetic effects and qualities of materials and execution to be used in the completed Work. Install mockups to comply with the following requirements, using materials indicated for the completed Work:
 1. Install mockups in the location and of the size directed by Architect. The Contractor shall carefully select materials, construction methods, finishes, and installation to be used for mockups and completed Work.
 2. Notify the Architect when mockups will be ready for review.
 3. Demonstrate the proposed range of aesthetic effects and workmanship, including seams, joints, connections, roof connections, fabrication, fastening, finish, sealant application, and installation. Show construction, finish, assembly, and installation of gutter and downspout straps.
 4. Obtain Architect's approval of mockups before starting interior woodwork and millwork fabrication. Mockup will be reviewed for materials, construction, contrast in finish and color, and installation.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging and accepting the completed Work. The Architect will determine acceptable aesthetic and construction variances, deviations, and ranges from accepted mockups.
 6. If approved mockup does not become part of the completed Work, demolish and remove mockups when directed.

1.6 PROJECT CONDITIONS

- A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

1.7 FINISH WARRANTY

- A. Furnish manufacturer's staling architectural fluorocarbon coating finish will be:
 - 1. Free of fading or color change in excess of 2 NBS units as measured per ASTM D 2244-68;
 - 2. Will not chalk in excess of numerical rating of 8 when measured in accordance with standard procedures specified in ASTM D 659-74;
 - 3. Will not peel, crack, chip or exhibit any other mechanical failure of paint to adhere to the substrate.

PART 2 - PRODUCTS

2.1 ALUMINUM

- A. Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:
 - 1. Factory-Painted Aluminum Sheet: ASTM B 209, 3003-H14

2.2 MATERIALS

- A. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.
- B. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.
- C. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.
- D. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- E. Elastomeric Sealant: Two-part polyurethane complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealants."
- F. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

2.3 FABRICATION, GENERAL

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated. Metal composition/alloy, gauge, and fabrication, handling, storage, and installation methods are to be of such to prevent oil-canning, and that visible oil-canning, as viewed from ground level, is not acceptable.

1. Installed perimeter flashing sheet metal (gravel stops, fascisa, coping, eave flashing, etc.), shall comply with specified FM uplift and with IBC 2006. If an uplift is not specified, comply with IBC 2006 requirements for project location or with FM I-90, whichever is more stringent. Assembled sheet metal units shall have been satisfactorily tested and passed FM requirements for the required wind uplift or the design for the sheet metal units shall be acceptable to IBC 2006.
 2. Include a Certification that sheet metal flashing meets specified FM and IBC 2006 requirements.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Form sheet metal on bending brakes. Shape, trim, and hand-seam with tools designed for purposes. Make bends and folds for interlocking joints to allow for thermal movement. Fabricate in 8 to 10 foot lengths with true well-defined edges and seams. Finish work free of blemishes abrasions, tool marks, burrs.
- D. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
- E. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- F. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- G. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- H. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
- I. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- J. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

- K. All radius sections shall be continuous with continuous seams and sections with no birds feet or cuts with cover plates, etc. Submit shop drawings showing exact forms, details, seaming, etc.

2.4 SHEET METAL FABRICATIONS

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
- B. Gutters
 1. Girth up to 15 Inches: 0.0320 inch thick aluminum.
 2. Girth 16 to 20 Inches: 0.040 inch thick aluminum.
 3. Girth 21 to 25 Inches: 0.050 inch thick aluminum.
 4. Girth 26 to 30 Inches: 0.063 inch thick aluminum.
- C. Downspouts: 0.040 inch thick aluminum.
- D. Conductor Heads: 0.0320 inch thick aluminum.
- E. Eave Flashing: 0.0320 inch thick aluminum.

2.5 FINISHES

- A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.
- B. High-Performance Organic Coating Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.
 1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
 - a. Color and Gloss: As selected by Architect from manufacturer's full range of choices for color and gloss.
- C. Gutters: Provide easily removed and cleaned stainless steel strainers for each collection box. Provide cradles, 1/8 inch x 1 inch galvanized steel and finished to match the exposed sheet metal. Separate aluminum gutters from galvanized steel cradles with mastic or tape.
 1. Cradles: Cold rolled galvanized steel bands. Galvanize to G90. Width shall be 1 inch. Thickness as recommended by the manufacturer and determined by gutter size, roof area, and 50 year rainfall for the area. However, provide minimum 1/8 inch thick. Wrap cradles neatly with same coil-coated steel used for gutters.

2. Size gutters and downspouts based on roof slope and roof square footage to handle rain runoff of a 50-year rainfall based on applicable current model building Code without overflowing or damaging the structure. Include the effect of the leaf filter system in the gutter sizing.
 3. Leaf Filter System: Provide leaf protection system that is a one-piece integral protection system and will direct leaves, pine needles, and roof debris from the gutter opening without blocking it while allowing roof water runoff to enter the gutter without overflowing. System shall prevent leaves from blocking water entry to the gutter and allow complete drainage of roof without overflowing. Fabricate filter system and gutter of same material, finish and color. Gutter cover type systems are not acceptable. Manufacturer shall provide a guarantee to clean any gutter that clogs and is equipped with the filter system.
- D. Downspouts: Provide with elbows and straps finished to match exposed sheet metal.
- E. Fascia: Form as detailed with interlocking flange and continuous cleat.

2.6 PRECAST CONCRETE SPLASH BLOCKS

- A. 3000 psi concrete; of size and shape indicated on the drawings. Fabricate using 1/2 inch to No. 4 size course aggregate and reinforce with 2 No. 4 rebars. Finish exposed surfaces smooth without honeycombs, cracks, bug holes, popcorn, spalls, forming fins, or other blemishes or defects.
1. Where splash blocks are to be installed on roof membrane, provide units that are acceptable to the roof membrane manufacturer and that will remain in place, shed and direct water without wear or deformation. Where required or splash blocks are to be installed directly on the roof membrane, provide suitable base separator sheet to separated the splash block from the roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods

indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

- B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Roof-Edge Flashings: Secure metal flashings at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.
- D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
 - 1. Use joint adhesive for nonmoving joints specified not to be soldered.
- F. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- G. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
 - 1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
 - 2. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.
- H. Gutters: Where shown on the Drawings, attach gutters to nailers securely with cradles that are spaced 36 inches on centers. Slope gutters to downspouts at a uniform rate of 1/16 inch per foot. When there are more than one downspout, hang gutters with high points equidistant from the downspouts. Lap sections a minimum of 1 inch in the direction of water flow. Terminate gutters 1/2 inch from vertical surfaces. Provide slip-type expansion joints midway between outlets

- I. Downspouts: Where shown on the Drawings, install with a straps securely attached to the structure. For downspouts up to 10 feet long, attach straps at the top and bottom. For downspouts 10 to 20 feet long, attach at the top and bottom and at the mid point. For downspouts greater than 20 feet, attach at the top and bottom and at intermediate points spaced no more than 10 feet on center. Keep downspouts a minimum of 1/2 inch from the wall.
- J. Vent Flashing: Flash pipe vents through roof with lead turned 6 inches on roof and turned down 4 inches into pipe.
- K. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:
 - 1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
 - 2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.
- L. Splash Blocks: Install at discharge of downspouts, where indicated, to receive drainage from downspouts.
 - 1. Where splash blocks are installed on a roof, set splash blocks on a separation pad recommended by the roof membrane manufacturer.
 - 2. Set pad in full bed of adhesive as recommended by the roof membrane manufacturer.
 - 3. Set pad and splash block on roof membrane prior to installing roof ballast.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 07 62 03

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes interior and exterior joint sealants, including sealants in exterior concrete slabs on grade.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight continuous seals without causing staining or deterioration of joint substrates.
 - 1. Failure of installed sealants includes, but is not limited to, the following:
 - a. Adhesive failure.
 - b. Cohesive failure.
 - c. Puncture failure.
 - d. Surface chalking.
 - e. Surface color change.
 - f. Staining of adjacent surfaces.
 - g. Surface crazing greater than 3 mils deep.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data from manufacturers for each joint sealant product required.
- C. Samples for verification purposes 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 the appearance of exposed surfaces adjacent to joint sealants.

- D. Certificates from manufacturers of joint sealants attesting that their products comply with specification requirements and are suitable for the use indicated.
- E. Product test reports for each type of joint sealants indicated, evidencing compliance with requirements specified.
- F. Manufacturer's Guarantee: Furnish sealant manufacturer's guarantee against non-performance of sealant as listed under Warranties. Guarantee shall include materials and labor for the following minimum periods:
- G. LEED Submittal:

Product Data for Credit EQ 4.1: For sealants and sealant primers used inside the weatherproofing system, including printed statement of VOC content.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
 - 1. For exterior applications and joints subject to movement, the installer shall be an experienced waterproofing contractor that specializes in installing the type sealants specified.
- B. Single Source Responsibility for Joint Sealant Materials: Obtain joint sealant materials from a single manufacturer for each different product required.
 - 1. Testing will not be required when joint sealant manufacturer is able to submit joint preparation data required above that are acceptable to Architect and are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- C. Product Testing: Provide comprehensive test data for each type of joint sealant based on tests conducted by a qualified independent testing laboratory on current product formulations within a 24-month period preceding date of Contractor's submittal of test results to Architect.
 - 1. Test elastomeric sealants for compliance with requirements specified by reference to ASTM C 920. Include test results for hardness, stain resistance, adhesion and cohesion under cyclic movement (per ASTM C 719), low-temperature flexibility, modulus of elasticity at 100 percent strain, effects of heat aging, and effects of accelerated weathering.

2. Arrange for all adhesion and other testing required by the sealant manufacturer for compliance with specified warranty requirements.
 3. A technical representative of the sealant manufacturer shall be present at the beginning of sealant operations. This technical representative shall demonstrate proper surface preparation and application procedures for each type sealant to be used, for each type substrate and each type conditions. Record the date of this visit, who attended the demonstration, and submit a copy of the record to the Architect.
- D. Substitute Requests For A Specified Entity
1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without "Or equal" or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.
 - e. Exact name of the specified entity and substitute entity. .
 4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
 5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers ("Better". "Cheaper". "More

competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.

- a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
 7. The manufacturer’s published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity that meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
 8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not complying with these provisions will be considered incomplete, unacceptable, and will be rejected:
 - a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer’s published data for performance criteria.

- f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
 - a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.6 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of joint sealants under the following conditions:
 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or when joint substrates are wet.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than or greater than allowed by joint sealant manufacturer for application indicated, or where joint-width ratio is not as recommended by the sealant manufacturer.
- C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period from date of Substantial Completion as follows:
 1. All Silicone Sealants: 20 years.

- C. Failure of any one of combination of criteria listed in Performance Requirements during the warranty period will be considered non-performance. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
- 1 Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 - 2 Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3 Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backer, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color of exposed joint sealants to comply with selections made by Architect from manufacturer's full range of standard colors for products of type indicated.
- C. VOC Content of Interior Sealants: Provide all sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Architectural Sealants: 250 g/L.

2.2 ELASTOMERIC JOINT SEALANTS

- A. The following sealants are referenced in the Sealant Schedule at the end of this Section:
1. Polyurethane:
 - a. Sealant P1: Two-part, non-sag, ASTM C920 and ASTM D1850, Type II. Provide one of the following or reviewed substitute:
 1. Tremco Vulkem 227
 2. Pecora Dynatrol II
 3. Sonneborn Sonolastic NP-II
 4. Dow Corning Contractor's Weatherproofing Sealant, CWS (± 25)
 5. Dow Corning Contractor's Concrete Sealant, CCS (± 50)

- b. Sealant P2: Two-part, self-leveling, ASTM C920 and ASTM D1850, Type II. Provide the following or reviewed substitute:
 - 1. Pecora Dynatrol II-SG
 - 2. Tremco Vulkem 245
 - 3. Tremco THC 900
 - 4. Dow Corning Parking Structure Sealant (SL)
 - c. Sealant P3: Non-Sag
 - 1. Pecora Dyna Tred (non-sag)
 - 2. Dow Corning Parking Structure Sealant (NS)
2. Silicone:
- a. Sealant S1: White, mildew resistant. Provide one of the following or reviewed substitute:
 - 1. Dow Corning 994
 - 2. Dow Corning 786 Mildew resistant
 - 3. General Electric 1700
 - 4. Pecora 898
 - 5. Tremco Tremsil 600
 - b. Sealant S2: General Building, ASTM C920. Provide one of the following or reviewed substitute:
 - 1. Dow Corning 795
 - 2. Dow Corning 756 SMS
 - 3. General Electric Silpruf
 - 4. Pecora 864
 - 5. Tremco Spectrem 2 or Spectrem 3
 - c. Sealant S3: Perimeter sealing, ASTM C920: Provide one of the following or a reviewed substitute:
 - 1. Dow Corning 790
 - 2. Dow Corning 756 SMS
 - 3. Pecora 890
 - 4. Tremco Spectrem 1
3. Acrylic Latex:
- a. Sealant L1: ASTM C834: Provide one of the following or reviewed substitute:
 - 1. Tremco 834
 - 2. Pecora AC-20 + Silicone
 - 3. Sonneborn Sonolac

4. Acoustical Sealant:
 - a. Sealant A1: Provide the following or reviewed substitute:
 1. Pecora BA-98 or AC-20-FTR
 2. Tremco Acoustical Sealant
5. Hybrid Sealant
 - a. H1: ASTM C920, Type M, Grade NS, Class 25, two-part sealant
 1. Pecora Pro-Sil SCT 1

2.3 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications approved by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonstaining, nonwaxing, nonextruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Size joint filler to a diameter recommended by the sealant manufacturer for the specific width of the joint being filled. However, minimum diameter shall be 50% greater than joint width.
 1. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, nonoutgassing in unruptured state.
 2. Proprietary, reticulated, closed-cell polymeric foam, nonoutgassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 g/cc per ASTM C 1083.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or

harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), sealing compound, sealers, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean concrete, masonry, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 - 3. Remove laitance and form release agents from concrete.
- B. Substrate Testing: Test masonry substrate for adhesion and staining.
- C. Joint Priming: Prime joint substrates where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by

cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
 - 1. Install joint fillers of type recommended by sealant manufacturer to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint width/depth ratio that allows optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint fillers or overlap ends
 - b. Do not twist multiple small sizes to make a larger size.
 - c. Do not stretch, twist, puncture, or tear joint fillers.
 - d. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
- E. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
 - 1. Install appropriate and correct sealant in all junctures such as joints, seams, terminations, intersections, formed by entities such as a material, product, component, system, or equipment when the manufacture of the entity does not provide closures for a juncture items. Sealant shall be installed at both like and unlike entities.
- F. Install sealant free of air pockets, foreign embedded matter, ridges and sags.
- G. For exterior joints, install sealants when the ambient temperatures are approximately midpoint of the normal yearly temperature extremes.
- I. Tooling
 - 1. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform surface.
 - 2. Tool sealant surface to configuration recommended by the sealant manufacture for the intended application.

3. Ensure that all air pockets are eliminated.
4. Ensure that sealant has full contact and adhesion with sides of joint.
5. Remove excess sealants from surfaces adjacent to joint.
6. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that installations with repaired areas are indistinguishable from original work.

3.6 FIELD TESTING

- A. A technical representative of the sealant manufacturer shall make periodic site visits during sealant application and at the completion of installation to inspect installed sealants and to perform adhesion tests on installed adhesives. Perform inspection and adhesion tests on random samples each type sealant installed, each type substrate, and each type condition and prepare a log of the inspections and tests performed. As a minimum, the log shall include the following information, with copies submitted to the Contractor and the Architect:
 - a. Date of inspection and testing.
 - b. Project name and location.
 - c. Room or Area where inspection and testing were made.
 - d. Name of technical representative.
 - e. Substrate (Includes but is not limited to, aluminum curtain wall, windows, masonry, tile, concrete, toilet fixtures, etc.).
 - f. Type sealant.
 - g. Sealant and joint condition.
 - h. Adhesion Test Results along with normal readings. +

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- e. Sealant and joint condition.
- f. Adhesion Test Results along with normal readings. +

SEALANT SCHEDULE

Scheduled sealants are specified under materials. Sealant applications are not limited to the following scheduled.

EXTERIOR APPLICATIONS

APPLICATION	SEALANT
General Use	S2
Perimeter of Openings	S2 or S3
Coping Joints	S2
Sheet metal flashing	S2
Vertical joints subject to movement	S2 or S3
Horizontal joints	P3
Non-moving joints that will require painting	H1

END OF SECTION 07 92 00

SECTION 08 52 14 - WOOD WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes mill-fabricated, double hung wood windows:
- B. Related Sections include the following:
 - 1. Division 06 section- "Interior Standing and Running Trim" for interior wood trim not included as part of wood window units and for millwork requirements.
 - 2. Division 08 Section "Glazing" for glazing requirements for wood windows, including factory-glazed window units.

1.3 DEFINITIONS

- A. Performance-grade number, included as part of the window designation system, is the actual design pressure in pounds force per square foot used to determine the structural test pressure and water test pressure.
 - 1. Structural test pressure, wind-load test, is equivalent to 150 percent of the design pressure.
 - 2. Water-leakage-resistance test pressure is equivalent to 10 percent of the design pressure with 2.86 lbf/sq. ft. as a minimum.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide wood windows engineered, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading without failure, as demonstrated by testing manufacturer's standard window assemblies representing types, grades, and sizes required for this Project according to test methods indicated.

- B. Standards: Performance requirements for operating force, air infiltration, water penetration, structural performance, and forced-entry resistance for wood windows are those specified in NWWDA I.S. 2, "Industry Standard for Wood Window Units."
- C. Test Criteria: Testing shall be performed by a qualified independent testing agency based on the following criteria:
1. Design wind velocity at Project site is 70 mph.
 2. Heights of window units above grade at the window centerline are indicated or can be determined from the Drawings. Consult with the Architect, if necessary, to confirm required loading and test pressures.
 3. Test Procedures: Test window units according to ASTM E 283 for air infiltration, ASTM E 547 for water penetration, and ASTM E 330 for structural performance.
- D. Performance Requirements: Testing shall demonstrate compliance with requirements indicated in NWWDA I.S. 2 for operating force, air infiltration, water penetration, structural performance, and forced-entry resistance for the type and performance grade of window units required. Where required design pressure exceeds the minimum for the specified window grade, comply with requirements of NWWDA I.S. 2, Article 6, "Optional Performance Classifications," for higher than minimum performance grades.
1. Air-Infiltration Rate for Operating Units: Not more than 0.37 cfm/ft. of operable sash joint for an inward test pressure of 1.57 lbf/sq. ft.
 3. Water Penetration: No water penetration as defined in the test method at an inward test pressure of 10 percent of the structural test pressure.
 4. Structural Performance: No failure or permanent deflection in excess of 0.4 percent of any member's span after removing the imposed load, for a positive (inward) and negative (outward) test pressure of 22.5 lbf/sq. ft.
 5. Thermal Transmittance: Provide window units, labeled and certified according to the National Fenestration Rating Council's Product Certification Program, with the following U-value as determined according to NFRC 100.
 1. U-Value: 0.57 Btu/sq. ft. x h x deg for fixed, double-glazed, unfinished, wood window units.
 2. Forced-Entry Resistance: Comply with Performance Level 10 requirements when tested according to ASTM F 588.

1.5 SUBMITTALS

- A. Product Data: For each type of wood window required. Include the following:
1. Construction details and fabrication methods.
 2. Profiles and dimensions of individual components.
 3. Data on hardware, accessories, and finishes.
 4. Recommendations for maintenance and cleaning of exterior surfaces.

- B. Shop Drawings: For each type of window required. Include information not fully detailed in manufacturer's standard Product Data and the following:
1. Layout and installation details, including anchors.
 2. Detailed installation drawings showing relationship between wall and windows.
 3. Show complete head, jamb, wall, sill, and flashing details
 4. Complete installation instructions and details.
 5. Elevations at 1/4 inch = 1 foot (1:50) scale and typical window unit elevations at 3/4 inch = 1 foot (1:20) scale.
 6. Full-size section details of typical composite members, including reinforcement and stiffeners.
 7. Hardware, including operators.
 8. Glazing details.
 9. Accessories.
 10. Location of weep holes.
 11. Panning details.
 12. Window cleaning provisions.
- C. Samples for Initial Selection: One 12-inch- long section of window members. Where finishes involve normal color variations, include Sample sets showing the full range of variations expected.
1. Interior Wood: Sample of factory primer.
 2. Metal Hardware: Metal and finish showing color and sheen to be provided.
 3. Glass: Provide samples of each type of glass. Where translucent glass is to be provided, sample to show pattern and density of etching and light transmission. .
- D. Test Reports: From a qualified independent testing agency indicating that each type, grade, and size of window unit complies with performance requirements indicated based on comprehensive testing within the last five years of current window units. Test results based on use of downsized test units will not be accepted.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firms whose windows have been certified under the NWWDA "Hallmark Program" for wood window units are listed in the current NWWDA "Membership and Product Directory" and comply with requirements indicated.
1. Provide only wood window units bearing an NWWDA "Hallmark Program" label certifying compliance with requirements of NWWDA I.S. 2.
- B. Single-Source Responsibility: Obtain wood window units from one source and by a single manufacturer.
- C. Glazing Standards: Comply with recommendations of the Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated.

- D. Mockup:
1. Provide sample installation for field testing window performance requirements and to determine acceptability of window installation methods.
 2. Approved mockup shall represent minimum quality required for the Work
 3. Approved mockup shall remain in place within the Work.
- E. Product Options: Drawings indicate size, profiles, dimensional requirements, and aesthetic effects of wood windows and are based on the specific window types and models indicated. Other manufacturers' products with equal performance characteristics may be considered provided deviations in size, profile, and dimensions are minor and do not alter the aesthetic effect. Refer to Division 1 Section "Substitutions."
- F. Safety Glass Standard: Provide products complying with testing requirements of 16 CFR, Part 1201 for Category II materials.
1. Subject to compliance with requirements, provide safety glass permanently marked with the certification label of the Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.
- G. Substitute Requests For A Specified Entity
1. Provisions, requirements, and stipulations stated under this paragraph of this specification apply not only to this specification, but they also apply to all other specifications that are included in the project manual, on the drawings or are otherwise a part of the Contract Documents even if not so stated in these documents. Information requested under this paragraph heading is the minimum required information for consideration and evaluation and additional information may be requested. This information is required in addition to information required by any substitute request forms that may be included in the Project Manual or Contract Documents, or otherwise provided.
 2. Where the Contract Documents list at least three entities (products, materials, components, systems, manufacturers, installers, methods, etc.), the Architect reserves the option to reject any and all requests for a substitute. Where the Contract Documents list only one entity without "Or equal" or similar language, substitutes will not be considered. Where the Contract Documents list less than 3 entities, substitutes may be reviewed and evaluated on an individual base.
 3. Include the following information on the cover page of the request:
 - a. Name of Project and project number as shown in the header of the specification
 - b. Date request is being made.
 - c. Name of person, company, and contact information of person requesting substitute.
 - d. Specification title and number and drawing number where the specified product is listed or shown.

- e. Exact name of the specified entity and substitute entity. .
4. When requesting a substitute, include all requested and required supporting data, specifications, and performance criteria. The Architect must receive this substitute request no later than the time stated elsewhere for submitting product substitutions. If no time is stated, then 10 days prior to date of bid opening. When a Request For Substitute Form is included in the Project Manual, properly complete the form and include it with the submittal.
5. Verbal requests for a substitute or requests that do not comply with these provisions are not acceptable, will be rejected, and will not extend the submittal deadline. Submittals that are incomplete have vague or unspecific answers (“Better”. “Cheaper”. “More competitive”, etc.); that lack supporting data to substantiate equal or superior quality/design; that do not include the requested proof, verification, reports, and substantiating documentation; or are received after submittal deadline will be rejected. Provide convincing answers as to why the substitute should be approved. Rejection or disapproval will not extend the submittal deadline.
 - a. If the substitute entity differs from specified entity, compare the substitute entity with the specified entity in a tabular format that clearly shows all the differences.
6. Include the following information on all requests for substitutes:
 - a. Length of time the manufacturer has been in business.
 - b. Whether the manufacturer operated under any other name, and if so, under what name and when?
 - c. Length of time the substitute entity has been on the market.
 - d. Whether the substitute entity has been marketed under any other name, and if so, under what name and when?
 - e. Who will install and service the substitute entity?
 - f. Whether the installer is trained and certified by the manufacturer? If so, describe how this training and certification are achieved and if training records are maintained?
 - g. All required changes in the project design that will be required to incorporate the substitute entity.
 - h. Describe any known problems or failures associated with the substitute entity? If there are any, provide details.
7. The manufacturer’s published literature, description, capabilities, operating and performance parameters, options, accessories, etc. of all submitted substitutes shall meet or exceed those published by the manufacturer of the specified entity even if they are not specifically mentioned in the Contract Documents. Additionally, manufacturers whose standards are less than those of the specified entity but are capable of producing an entity hat meets the specified entity shall not, for the convenience of their normal production methods, vary from the specified entity standards.
8. Where test data and standards are being submitted as supporting data and for comparison with the specified item, comply with the following requirements. Submittals not

complying with these provision will be considered incomplete, unacceptable, and will be rejected:

- a. All substitutes shall meet all of the minimum performance criteria of the specified entity.
 - b. Submit certified data provided by an independent testing laboratory.
 - c. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria and denoting the differences between the specified item the substitute item.
 - d. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item.
 - e. Where a performance criterion is not listed in the specifications, comply with the specified product manufacturer's published data for performance criteria.
 - f. Where the specified entity requires certifications, registrations, approvals, policies, practices, etc., submit proof that the substitute entity is in compliance.
9. Each and all requests for substitutes shall be signed by the person making the submittal. By signing the submittal, the person requesting the substitute certifies and agrees to the following requirements. Requests without the signature of a responsible person will be rejected.
- a. That the specifications have been read and are understood,
 - b. That the entity being submitted meets or exceeds all provisions of the specifications,
 - c. That all submitted information is true and accurate,
 - d. Will remove the substitute entity and replace it with an acceptable product, at his expense, if it is determined that the substitute does not meet the specifications as certified.
 - e. Agrees to pay for all necessary design changes and increased construction costs to incorporate the substitute entity.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify window openings by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.
- B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.
- C. Handling: Protect materials and finishes during handling and installation to prevent damage

D. Environmental Limitations:

1. From time of manufacture until delivery, store wood windows in conditioned spaces to maintain a moisture level as recommended by the AWI or 12 percent maximum, whichever is more severe. Wood windows that are exposed to unacceptable conditions prior to delivery shall be removed and replaced with new wood windows. Warping, swelling, water stains, sticking, or moisture levels exceeding 12 percent are indicative of improper storage or exposure to moisture.
2. Coordinate delivery so that windows are not on site more than 10 days prior to installation. If delivery will require more than 10 days on site prior to installation, store in bonded and conditioned warehouse until time of installation. Wood windows that remains on site more than 10 days prior to installation shall be removed and replaced with new windows.
4. Obtain and comply with wood window's manufacturer and installer's coordinated advice for optimum temperature and humidity conditions after HVAC is operational.

1.9 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty, executed by wood window fabricator agreeing to repair or replace window components that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:
 1. Structural failures, including excessive deflection, water leakage, air infiltration, or condensation.
 2. Deterioration of finishes and other materials beyond normal weathering.
- C. Warranty Period for Insulating Glass: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with NWWDA I.S. 2.
- B. Wood: Clear ponderosa pine or other suitable fine-grain lumber, kiln dried to a moisture content of 6 to 12 percent at time of fabrication and free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch wide by 2 inches long.

1. Lumber shall be water-repellent preservative treated after machining per NWWDA I.S. 4.
- C. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with requirements of ASTM B 633 for SC 3 (severe) service condition; provide sufficient strength to withstand design pressure indicated.
- D. Fasteners: Comply with NWWDA I.S. 2 for fabrication and with manufacturer's recommendations and standard industry practices for type and size of installation fasteners.
 1. Use zinc-coated or nonferrous nails and screws for window fabrication and installation.
- E. Weather Stripping: Accurate Series 10-UP.
- F. Glass and Glazing Materials: Provide manufacturer's standard clear, glazing material that complies with Division 8 Section "Glazing."

2.3 ACCESSORIES

- A. Muntins: Provide grilles in designs shown with widths and profiles to match existing true divided lites..

2.4 DOUBLE HUNG WINDOWS

- A. Window Grade: Comply with requirements of NWWDA Performance Grade DP15.

2.5 FABRICATION

- A. General: Fabricate wood window units to comply with indicated standards. Include a complete system for assembly of components and anchorage of window units.
 1. Comply with requirements of NWWDA I.S. 2 for moisture content of lumber at time of fabrication.
- B. Fabricate windows to produce units that are reglazable without dismantling sash framing. Provide openings and mortises precut, where possible, to receive hardware and other items.
- C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to the Project site, to the maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

2.6 FINISHES

- A. Wood Finish: Provide the following finish on exposed wood in units:
 - 1. Shop-Primed Units: Provide manufacturer's standard shop-prime coat on all interior and exterior wood surfaces .

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings before installation. Verify that opening is correct and sill plate is level. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Masonry surfaces shall be dry and free of construction debris.
 - 2. Wood frame walls shall be dry, clean, sound, well-nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 of corner.
 - 3. Coordinate window installation with wall flashings and other built-in components.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions and recommendations for installing window units, hardware, operators, accessories, and other components of the Work.
- B. Set window units level, plumb, true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.
- C. Set sill members in a bed of sealant or with joint fillers or gaskets, as indicated, to provide weathertight construction.

3.4 CLEANING

- A. Clean interior and exterior surfaces immediately after installation. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.
- B. Clean glass immediately after installing windows. Wash and polish glass on both faces before Substantial Completion. Comply with manufacturer's recommendations for final cleaning and maintenance. Remove nonpermanent labels from glass surfaces.

- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

3.5 PROTECTION

- A. Protect window units from damage or deterioration until the time of Substantial Completion.

END OF SECTION 08 52 14

SECTION 09 90 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.
 - 1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop-priming and surface treatment specified under other Sections.
 - 2. Providing and paying for all required personnel air monitoring according to OSHA Standard 29 CFR 1926.62, relative to lead-based paints.
 - 3. Coordinate lead-based paint activities with the Environmental Consultant.
 - 4. Custom Finishes: Where finishes are specified, the Contractor shall provide for special custom colors, patterns, and finishes as selected by the Architect.
 - 5. All information in this section pertaining to lead paint also applied to Division 09 Section – Exterior Restoration Painting.
- B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.
 - 1. Painting includes field-painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
- C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 - 1. Prefinished items not to be painted include the following factory-finished components:
 - a. Acoustic materials.
 - b. Architectural woodwork and casework.
 - c. Finished mechanical and electrical equipment.
 - d. Light fixtures.
 - e. Switchgear.

- f. Distribution cabinets.
 - 2. Concealed surfaces not to be painted include wall or ceiling surfaces in the following generally inaccessible areas:
 - a. Foundation spaces.
 - b. Furred areas.
 - c. Utility tunnels.
 - d. Pipe spaces.
 - e. Duct shafts.
 - 3. Finished metal surfaces not to be painted include:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper.
 - e. Bronze.
 - f. Brass.
 - 4. Operating parts not to be painted include moving parts of operating equipment, such as the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 - 5. Labels: Do not paint over Underwriters Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- D. Related Sections: The following Sections contain requirements that relate to this Section:
- 1. Division 06 Section "Exterior Wood Repair and Replacement" for items to be painted
 - 2. Division 06 Section "Simulated Wood" for items to be painted.
 - 3. Division 06 Section "Simulated Wood Exterior" for items to be repaired
 - 4. Division 06 Section "Composite Columns" for items to be repaired
- 1.3 SUBMITTALS
- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
 - B. Product data for each paint system specified, including block fillers and primers.

1. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
 2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
 3. When submitting a substitute for specified paints, submit Performance Characteristics based on same tests and units of measure as listed in published data for specified products. Drying times shall be measured at same temperature and relative humidity and gloss units measured at the same angle as those listed in the manufacturer's published literature of the specified products. If manufacturer's published literature for substitute products states conditions that differ from those for the specified materials, submit certified calculations that convert advertised conditions to meet the conditions of the specified product. Submittals not meeting this requirement will not be reviewed.
 4. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
 5. Where substitutes are being submitted for review, as a minimum the following listed properties of the substitute product shall meet or exceed the same published properties of the specified product. Submittals without these properties will not be reviewed:
 - a. Generically the same
 - b. Solids volume
 - c. Solids weight
 - d. Recommended spread rate
 - e. Recommended dry film thickness
 - f. Drying times measured under the same conditions as those specified
 - g. Sheen/Gloss measured at the same angle as those specified
 - h. VOC properties
 - i. Abrasion resistance measured by the same testing standard and using the same units of measure.
 - j. Hardness
 - k. Chemical resistance
 - l. Weather/UV resistance
 - m. Pot life
- C. Samples for initial color, gloss, and texture selection in the form of manufacturer's color charts.
1. After color selection, the Architect will furnish color chips for surfaces to be coated.
- D. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.
1. Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until

- required sheen, color, and texture are achieved. Approved samples will be used as a standard to judge, accept, or reject color, gloss, texture, and other attributes of the applied paints. The Architect will have final judgement of aesthetics of applied paints.
2. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.
 3. Submit samples on the following substrates for the Architect's review of color and texture only:
 - a. Concrete Masonry: Provide two 4 x 8-inch samples of masonry, with mortar joint in the center, for each finish and color.
 - b. Painted Wood: Provide two 12-inch square samples of each color and material on hardboard.
 - c. Stained or Natural Wood: Provide two 4 x 8-inch samples of natural and stained wood finish on actual wood surfaces.
 - d. Ferrous Metal: Provide two 4-inch long samples of each color and finish.
- E. Paint Schedule: After all painting has been completed and accepted by the Owner, the painting contractor shall prepare and submit to the Owner an as-painted painting schedule. This schedule shall be dated, in tabular form, and shall list the following information by room name/number:
1. Room Name
 2. Room Number
 3. Paint Manufacture
 4. Product Name
 5. Product Color
 6. Product Number
- A. F. Certifications: Submit a copy of the following certifications to the Architect and the Environmental Consultant:
1. For each applicator, their current lead certification, in conformance with OSHA Standard 29CFR1926.62, showing date, place, and type of certification. Lead paint certifications for each applicator shall be maintained throughout the painting contract.
 2. Lead physicals for each applicator in conformance with OSHA Standard 29CFR1926.62. Lead physicals for each applicator shall be maintained throughout the painting contract.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall meet all of the following requirements:
1. Have products and paint systems listed with the Master Painters Institute (MPI) at the time of invitation or advertisement for bids for this project.
 2. Be able to provide published complete product performance data sheets for the specified products. These sheets shall be available at the time of invitation or advertisement for bids for this project.

3. Have the production volume capacity to develop, produce and deliver the volume of paint and coatings required for this project within the required lead times to meet delivery dates without delaying the project.
 4. Be actively engaged in researching and developing its own paint and coating formulations.
 5. Specialize in manufacturing paint and protective coatings of the type specified for this project.
 6. Employ a fully trained and experienced technical staff capable of providing necessary field support to investigate problems and failures regarding surface preparation, application, and performance of supplied paints and coatings. As a minimum, technical staff shall have their own diagnostic equipment including dry film thickness gauges, adhesion gauges, and gloss meters.
- B. **Applicator Qualifications:** Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.
- C. **Single-Source Responsibility:** Provide primers and undercoat paint produced by the same manufacturer as the finish coats.
- D. **Benchmark Samples (Mockups):** Provide a full-coat benchmark finish, including painting and staining, sample of each type of coating, staining and natural finish and substrate required on the Project. Comply with procedures specified in PDCA P5. Duplicate finish of approved prepared samples.
3. The Architect will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted or finished with a stain or natural finish.
 - a. **Wall Surfaces:** Provide samples on at least **100 sq ft** of wall surface.
 - b. **Small Areas and Items:** The Architect will designate an item or area as required.
 4. After permanent lighting and other environmental services have been activated, apply coatings in this room or to each surface according to the Schedule or as specified. Provide required sheen, color, and texture on each surface.
 - a. After finishes are accepted, the Architect will use the room or surface to evaluate coating systems of a similar nature.
 5. Final approval of colors, stains, finishes and overall aesthetics will be determined by the Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.

- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 JOB CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 90 percent; or at temperatures less than 5 F deg above the dew point and falling; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.
- D. Paint that is applied under conditions other than these stated conditions will be removed, surfaces prepared, and new paint applied under acceptable conditions at no additional cost.

1.7 EXTRA MATERIALS

- A. Provide 1 gallon of paint for each type and color of paint applied. Furnish extra paint in manufacturer's sealed shipping containers. Containers shall only be opened by the painter manufacturer/supplier to formulate required colors/mixes. These extra materials shall not be opened or used by the Contractor without written permission from the Owner. Place a label,

protected by clear plastic, on the lid of each container with the following typewritten information:

1. Paint Manufacturer
2. Product name and number
3. Mixing and color formulation
4. Painting contractor
5. Date that the paint container is put in the Owner's inventory
6. Room or area number where the paint applied was used.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Paint systems and manufacturers listed in the paint schedule are by The Sherwin-Williams Company and are intended to establish expected quality, performance, and type paint and are not intended to limit competition. Colors shown in Finish Schedule may not be Sherwin-Williams. However products submitted for review must meet or exceed the published performance criteria of the specified product. Submitted product must be accompanied with the manufacturer's published product data sheets that show performance criteria. Prepare supporting data in side-by-side tabular form showing the submitted criteria next to each specified performance criteria. Show submitted data using same tests and standards and with the values and results in the same units of measure as those shown for the specified item. All substitutes shall meet all of the minimum performance criteria of the specified product. Submittals not complying with this provision will be considered incomplete, unacceptable, and will not be reviewed or approved. Subject to compliance with requirements, products of one of the following manufacturers may be submitted for review.

1. Duron
2. ICI Paints
3. Porter Paints
4. PPG Industries, Pittsburgh Paints

- B. The applicable paint manufacturer intended for use on this project shall review the specified paint systems for accuracy, performance, and product availability. Notify the Architect of any discrepancies and compatibility between the substrates and paint systems and for intended use. Submit a letter of review and acceptance to the Architect prior to date of Bid. Failure to submit the requested letter will be inferred as acceptance of the specified paint systems.

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

- B. **Material Quality:** Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. **Proprietary Names:** Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.
- C. **Colors:** Provide for selections made by Architect from manufacturer's full range of standard and custom styles, colors, textures, and patterns.
- D. **Lead-Based Paint Barrier:** Where existing lead-based paint is to be top-coated (encapsulated) with a new finish paint, lead barrier paints, that contact the existing lead-based paints and act as an intermediate coat between the lead-based paint and the finish coat, shall be as recommended by the paint manufacturer. This barrier paint shall be acceptable to EPA, OSHA, and local governing officials for the intended purpose. Notify the Architect where specified paints are not suitable for lead-based paint top-coatings (encapsulation).

2.3 CLAEANING MATERIALS

- A. To remove stains, spots, mold, and mildew, use Extra Muscle Pre-Paint Cleaner by Great Lakes Laboratories or as required by the paint manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected.
 - 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. **Moisture Testing.** Test all interior and exterior wood surfaces and to be painted with pinless moisture meter to ensure moisture level complies with manufacturer's requirements. If manufacturer does not have requirements, then 15 to 16 percent maximum for exterior wood and 8 percent maximum for interior wood. No painting will be permitted if moisture content exceeds the recommended content. Record the following minimum information and submit to the Architect:

1. Name of person making measurements
 2. Date and time of measurement
 3. Manufacturer and model no. of meter being used.
 4. Weather conditions at time of measurements (temperature in deg. F., relative humidity in %, and dew point in deg. F.
 5. Location on structure of each reading. For reference, make measurements at a protected area known to be dry to establish a base line. As a minimum, make measurements at the following locations on each side of the structure at the roof line and the grade line.
 - a. Trim
 - b. Sills and Jambs (window and door)
 - c. Doors
 - d. Windows frames
 - e. Weather boards
 - f. Where wood is in contact with masonry, concrete, or stone, check moisture content of these materials on the meter's relative scale.
 6. Record moisture levels in percent for each reading.
- C. Cementitious Materials:
1. Masonry: Test all masonry surfaces that were exposed to moisture and are to be painted for moisture to ensure moisture level complies with manufacturer's requirements. Test with a pinless moisture meter calibrated for masonry. Moisture shall be within the limits of the paint manufacturer. If none specified, 12 percent or less.
 2. Concrete: Test all concrete surfaces to be painted or coated for moisture to ensure moisture level complies with manufacturer's requirements. Test with a pinless moisture meter specifically designed for and calibrated for concrete. Moisture shall be within the limits of the paint manufacturer. If none specified, 8 percent or less.
- D. Dry Wall: Test all dry wall to be painted for moisture content levels that are acceptable to the paint manufacturer and the dry wall manufacturer. If acceptable levels are not available, then perform moisture tests in accordance with ASTM D4263 –Test Method For Indicating Moisture In Concrete By the Plastic Sheet Method. Although this method was developed for determining moisture presence in concrete, it is also suitable for dry wall work. If there is any presence of moisture on the back of the plastic sheet after the prescribed time, the dry wall is too damp to paint. Retest in the same location after the dry wall has been allowed to dry. Continue testing for moisture until there is no trace of moisture. Submit reports showing locations where tests were conducted.
- E. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.
- F. Remove existing paint with a bead blaster using poly bead that will softly and gently remove paint without damaging, distorting, or altering the wood surfaces. The system must have an enclosed vacuum collection and reclamation system with enclosed containers that will collect removed paint and deposit it safely in enclosed containers. System shall be totally enclosed to prevent beads and

removed paint from becoming airborne. The collection system shall have provisions to separate the beads from the paint and then deposits the beads and paint in separate enclosed containers.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Overhead Spraying
1. In areas where overhead structure is to be sprayed, spray the overhead first starting with the highest point and working down.
 2. If possible spray the overhead before the walls and floors have been finished.
 3. Protect all areas from overspray and fallout.
- C. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- D. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.
 2. Cementitious Materials: Prepare concrete, concrete masonry block, and brick surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. **Roughen, as required, to remove glaze and establish a suitable anchor pattern for topcoats.** If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Ensure materials have cured a minimum of 28 days.
 - b. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - c. Moisture: Determine moisture content of surfaces by performing appropriate tests. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions. Submit test results along with locations where measurements were made to the Architect.

- d. Alkalinity: Determine alkalinity content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Ensure that pH is 10 or lower. Submit test results along with locations where measurements were made to the Architect.
- e. Brick: In addition to above, perform the following:
 - 1) Confirm with paint manufacturer that paint to be used is suitable for clay composition and glaze of the brick.
 - 2) Knock down glaze as recommended by the paint manufacturer.
 - 3) For previously painted brick, brush blast surfaces to achieve a surface profile acceptable to the paint manufacturer.
 - 4) Ensure that brick surfaces are primed with alkali resistant primer prior to applying finish paint.
 - 5) Do not apply primers or paints until a technical representative of the paint manufacturer has accepted the prepared surfaces.
- 3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
 - c. When transparent finish is required, backprime with spar varnish.
 - d. Backprime paneling on interior partitions where masonry, or other wet wall construction occurs on backside.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.
 - f. Do not use steel wool to sand or smooth wood.
 - g. Check all wood surfaces for blue stain. Remove blue stain carefully with oxalic acid or Ply Brite.
 - h. Where substrate bleeds through occurs, apply as many coats of stain block as necessary to stop the bleed through. Use blocker that is recommended by the finish coat manufacturer.
 - I. Remove existing paint with a bead blaster using poly bead that will softly and gently remove paint without damaging, distorting, or altering the wood surfaces. The system must have an enclosed vacuum collection and reclamation system with enclosed containers that will collect removed paint and deposit it safely in enclosed containers. System shall be totally enclosed to prevent beads and removed paint from becoming airborne. The collection system shall have provisions to separate the beads from the paint and then deposits the beads and paint in separate enclosed containers.

4. Ferrous Metals:
 - a. Prepare only those surfaces that can be safely primed that same day while allowing for manufacturer's recommended curing time. Do not allow prepared surfaces to remain unprimed longer than 8 hours or overnight. Prepared surfaces that are allowed to remain unprimed longer than 8 hours or overnight shall be prepared again as specified even if there are no traces of rust bloom or dirt.
 - b. Remove loose dirt from damaged areas with a soft brush or with clean, non-linting rags.
 - c. Solvent-clean to remove grease, grime, residue, and surface contamination from damaged areas according to SSPC-SP1 – Solvent Cleaning.
 - d. Allow all surfaces solvent cleaned to thoroughly dry.
 - e. Remove loose primer and paint back to sound paint according to SSPC 3 – Power Tool Cleaning. Use SSPC 2 - Hand Tool Cleaning for areas not accessible to power tool cleaning. Remove all traces of visible mill scale, flux, and weld spatter.
 - f. Where existing primer is glazed or shiny, knock down glaze or gloss to establish and anchor pattern for new primer.
 - g. Where existing primer appears to be thin as evidenced by shadows or variegated appearance, check thickness of primer with a magnetic thickness tester such as a Positester. If dry film thickness of primer is less than 2 mils, perform steps b, c, d, e, and f of this procedure, and prime as specified.
 - h. When performing surface preparation, feather all exposed edges of existing primer to zero.

5. Galvanized Surfaces:
 - a. Remove soil, cement spatter, weld flux and spatter, and other surface dirt with a stiff brush, scraper, power grinder (for weld flux and spatter), or other suitable means.
 - b. Remove oil or grease by wiping or scrubbing the surface with rags or brushes wetted with suitable solvent such as mineral spirits according to SSPC-SP1-Solvent Cleaning. Perform final wiping with clean solvent and clean rags or brushes. Suitable solvents are mineral spirits, turpentine, or high-flash naphtha. If high-flash naphtha is selected, it shall be used only outdoors or in an extremely well ventilated area. Only when conditions prevent the use of flammable or toxic solvents such as MEK, mineral spirits, etc. for cleaning, then use safety solvents such as OF 482 by Hexcel Chemical Products, 205 N. Main Street, Lodi NJ 07664; phone 201 / 472-6800. Consult with Hexcel for specific products applications.
 - c. Should residual oils be difficult to remove, use an alkaline detergent such as trisodium phosphate (TSP). After cleaning, wash these surfaces thoroughly with water to remove the alkaline residue. Use water or water under pressure, preferably both. Follow manufacturer's instructions closely.
 - d. Some materials may not be easily removed by the above solvents and detergents. If this is the case, use stronger solvents such as methyl ethyl ketone (MEK) or

- acetone. Use aromatic and chlorinated hydrocarbons and ketones only when there is adequate supervision to assure safe working conditions.
- e. Allow surfaces to dry completely then apply a vinyl wash primer to a minimum dry film thickness of 0.5 mil but not exceed 1.0 mil. Top coat wash primer within 8 hours or as directed by coating manufacturer.
 - f. Repair galvanized surfaces with galvanizing repair paint.
 - g. Test for Passivation Treatment: Prior to painting or applying any type of treatment, prep, repair material, or coating, test all galvanized steel for passivation treatment as follows:
 - 1.) Remove all oils and contamination as previously described.
 - 2.) Thoroughly sand a small area of the galvanizing with 80-150 grit sandpaper.
 - 3.) Saturate a small cotton swab with a 2 % solution of copper sulfate (Available at most drug stores) and dab both the sanded area and an unsanded area of the galvanized steel.
 - 4.) If both the sanded and unsanded areas turn black at approximately the same time (within approximately 10 seconds), the galvanizing was not treated with a passivator.
 - 5.) If only the unsanded area does not turn black or turns black slower than the sanded area, the galvanized steel was treated with a passivator.
 - 6.) If neither sanded or unsanded areas turn black, then the metal is not galvanized.
 - 7.) If test indicates the metal is galvanized steel that has been treated with a passivator, then prepare the surfaces as recommended by the paint manufacturer.
6. Previously Painted Surfaces:
- a. Remove grease, oil and dirt according to SSPC-SP-1 solvent cleaning.
 - b. Only when conditions prevent the use of flammable or toxic solvents such as MEK, mineral spirits, etc. for cleaning, then use safety solvents such as F0482 by Hexcel Chemical Products, 205 N. Main Street, Lodi, NJ 07644: phone 201 / 472-6800. Consult with Hexcel for specific products applications.
 - c. Remove dust, grime, loose dirt, etc. with soft brush and vacuum. Remove all loose paint back to sound paint, and knock down all gloss. **Roughen, as required, to remove glaze and establish a suitable anchor pattern for topcoats.** Ensure that surfaces are sufficiently abraded and roughened to provide a sound anchoring base for new paint.
 - d. Where rusting conditions exist on ferrous surfaces, remove rust according to SSPC-SP2-Hand Tool Cleaning or SSPC-SP3-Power Tool Cleaning. Touch up with one coat of coating recommended by finish coating manufacturer to a dry film thickness recommended by finish coat manufacturer.
 - e. Where knots in wood are exposed or have damaged or discolored the finish, scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer and finish. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

- f. Where paint is missing, damaged, dented, or concrete, concrete block, wood, and gypsum wallboard, are exposed, remove surface contamination, feather all edges to zero, sand surfaces smooth, and prime surfaces with primer recommended by finish coating manufacturer. Primer shall be compatible with the existing and new finish.
- g. Where substrate bleeds through occurs, apply as many coats of stain block as necessary to stop the bleed through. Use blocker that is recommended by the finish coat manufacturer.
- h. Where paint is loose or is not otherwise fully and tightly adhered to the substrate or to undercoates, remove all paint back to sound paint and down to the substrate and then feather all edges to zero. If 40 percent or more of the paint on a given substrate (wall, floor, ceiling, door, column, etc.) is loose or damaged or is otherwise unsound, remove all of the paint down to the substrate. If 25 percent or more of paint on given substrate is loose or is not otherwise fully and tightly adhered to the substrate or to undercoates, the technical representative of the paint manufacturer shall approve surface preparation prior to beginning painting.
- i. Test small area of previously painted finish with new finish paint in the presence of the Owner. Apply finish paint to specified thickness. Do not continue coating this previously painted surface until test area has been reviewed by the Owner. Continue test for manufacturer's recommended published "length of time before recoating". If the previously painted surface blisters, wrinkles, dissolves, delaminates, or shows other signs of incompatibility, the previously painted surface and new finish are not compatible. Where previously painted surface is not compatible with finish coat, apply a proper barrier coat to prime coat. Allow manufacturer's suggested drying time between succeeding coat and check film of previous coat with fingernail to be certain it is cured. Notify the Owner before applying succeeding coat so that previous coat may be inspected, if necessary, and credited as an applied coat. Failure to do so shall result in recoating at no expense to the Owner.
- j. Where surrounding paint has been removed to expose substrate and the edges of removed paint have feathered to zero, touch up exposed substrate with proper and recommended primer. After touch up has properly cured, apply a complete prime coat over entire surface to be painted including the touched up surfaces.
- k. A qualified technical representative from the paint manufacturer shall approve, in writing, a sample surface preparation for each type substrate to be prepared over previously painted surfaces. This approval shall state time, date, location, and substrate being evaluated. The approved sample shall be a standard for evaluating all other surface preparation for the same substrate.
- l. Lead-based paints:
 - 1) Applicators involved in the disturbance of lead-based paint must comply with OSHA 29 CFR 1926.62. OSHA requires that the employees involved in the contact of lead-based paint must be trained, must have medical examinations (if the action level is exceeded during work activities involving the disturbance of lead-based paint), and must have an exposure assessment performed. If the employee is exposed to levels over the Permissible Exposure Limit (PEL), other work engineering and

personnel protective equipment requirements of OSHA must be followed in accordance with 29 CFR 1926.62.

- 2) Perform required personnel air monitoring to establish employee exposure assessments in accordance with OSHA 29 CFR 1926.62 when working with lead-based paints. Send copy of the air monitoring reports to the Architect, and the Environmental Consultant (AAA Environmental).
 - 3) Prior to the disturbance of lead-based painted surfaces, place a layer of six mil polyethylene sheeting on the floor beneath the work area. The intent of work-related activities involving the disturbance of lead-based paint is to minimize large accumulations of lead. Clean up floors and other surfaces contaminated with lead-based paint dust/chips by vacuuming and/or wet wipe methods to minimize the likelihood of lead becoming airborne. The vacuum shall be equipped with HEPA filters. Compressed air shall not be used to remove lead from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the airborne dust created by the compressed air.
 - 4) All construction debris having painted surfaces exceeding 0.06% lead must be disposed of in a municipal solid waste landfill (lined landfill) according to SCDHEC Division of Solid and Waste Planning and Recycling pertaining to waste disposal requirements. Hazardous waste shipments shall be accompanied by a Uniform Hazardous Waste Manifest that shall be properly completed and copies returned to the Architect before the Contractor receives final payment.
 - 5) Upon completion of all work activities involving the disturbance of lead-based painted surfaces including the exterior of the building, the Environmental Consultant will conduct a final visual inspection of the areas. Provided the areas are visibly clean, clearance testing shall be performed. The clearance test will include the collection of wipe samples from the interior areas of the building. These results will be compared to current regulatory requirements as outlined EPA 40 CFR Part 745. Should the clearance samples fail to meet the regulatory requirements outlined in EPA 40 CFR Part 745, the contractor will be required to perform additional cleaning, and a second clearance test will be performed at the Contractor's expense for all professional and laboratory fees.
8. Dry Wall
1. Inspect dry wall in the presence of the General Contractor, drywall contractor and Architect to evaluate condition of drywall for painting. Ensure that all defects in drywall are corrected prior to primer application.
 2. Brush or wipe down drywall surfaces with a damp (not wet) mop to remove all loose dust.
 3. Evaluate drywall surfaces after primer has cured. Primer will highlight imperfections that must be corrected prior to application of top coats.
9. Paint Removal In Preparation For Staining
- a. Remove paint with commercial-type paint removers.

- b. Mask and protect adjacent surfaces and surfaces not to have paint removed.
 - c. Remove all traces of paint, existing finish, and paint remover from all cracks, crevices, nail holes, and depressions.
 - d. Select initial grades of sanding material (paper and steel wool) in a grade that will not scratch the wood. The progress through finer grades of paper and steel wool until all sanding is complete.
 - e. When surfaces are dry, sand surfaces to a smooth finish. Vacuum dust. Dampen surfaces, allow to dry and then resand to remove all whiskers. Vacuum all dust. Continue the moisten-dry-sand-vacuum process until all whiskers have been removed.
 - f. Sand with progressively finer grades of paper. Then progress to steel wool and finish with 4-0 steel wool.
 - g. Leave all surfaces in a dry, clean, and smooth condition ready for staining. Prepared surfaces shall be in a condition to properly accept a stain and to finish in a color and gloss acceptable to the Architect.
- E Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.
- 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - 2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
 - 3. Use only thinners approved by the paint manufacturer and only within recommended limits.
 - 4. Do not store shellac in iron containers.
- F Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat. Should there be a disagreement in the number of coats applied and the individual coats were not tinted so as to be distinguished, then the painting contractor shall apply, at no additional cost, the additional number of coats that when added to the number of coats already applied by the painting contractor and that can be positively distinguished, will equal the number of specified coats.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
- 1. Use only primer color that is recommended on the back of the paint manufacturer's finish color chip to achieve the required color. Where the finish color, sheen, or texture is not as represented in the approved color sample and the recommended primer was not

used, apply required additional coats to achieve acceptable results. These additional coats will be applied at no increase in contract sum or time.

- B. Do not paint over defective undercoat, dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Provide finish coats that are compatible with primers used.
 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, texture, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces. The additional coats shall be applied at no additional cost to the Owner.
 5. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 6. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 8. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 10. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
 11. Sand lightly between each succeeding enamel or varnish coat.
 12. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

1. Brushes: Use brushes best suited for the material applied.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- E. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate and dry film thickness for each coat. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- F. Block Fillers: Apply block fillers to concrete masonry at a rate and as many coats as required to fill, seal, and smooth, and to ensure complete coverage with pores filled so that finish produces a smooth and cleanable surface. Prior to applying an epoxy finish to CMU in the Kitchen and Cafeteria, obtain approval from the District Food Supervisor, of the application of the block filler.
- G. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
1. Back Priming: Back prime, including all edges and concealed surfaces, of all lumber, ferrous and galvanized metal prior to installation. Apply primer to the same specifications as for the exposed surfaces. Installed items not back-primed shall be removed, properly primed, and reinstalled at the Contractor's expense. Damaged materials shall be replaced. This provision applies to both interior and exterior installations. Coordinate with all carpentry and steel specifications for materials to be painted.
- H. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
1. Provide satin finish for final coats.
- I. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

3.4 FIELD QUALITY CONTROL

- A. Each applicator shall have a clean accurate wet film gauge for use over smooth surfaces (metal, GWB, smooth and plaster and concrete, etc.). During application of each coat of paint, including primers, each applicator shall make regular measurements of the applied paint using a clean wet film gauge. The gauge shall be wiped clean after each measurement.

1. The project painting supervisor shall complete a Project Paint Record form similar to the form at the end of this specification. The forms shall be completed at the end of each day and submitted to the Architect weekly.
 - a. Date: The date measurements were taken.
 - b. Location: Room or area where measurements were made.
 - c. Substrate: Drywall, CMU, concrete, wood, steel doors, structural steel, etc.
 - d. Applied WFT or Spread Rate Per Coat: Show the specified wet film thickness (WFT) and the actual measured wet film thickness of each coat. Show the min-max range such as 4-6 mils. If a coat is not applicable (primer is shop-applied), no entry is required.
 - e. For irregular surfaces such as CMU and rough concrete and plaster, thickness shall be determined by spread rate. Spread rate is determined as follows:
 1. Check the manufacturer's published theoretic spread rate of square feet per gallon per coat.
 2. Measure off the square footage a gallon of paint is to cover on the substrate that is to be painted
 3. Apply one gallon of properly prepared paint over the measured area of substrate using equipment and procedures that will be used for actual application.
 4. If the gallon of paint completely covers the measured area in an even and uniform manner with no drips, sags, runs, or spread marks, the spread rate is acceptable. If there is paint left over, the spread rate may be too high resulting in a coat that is too thin. If the paint runs out before completing, the spread rate may be too low resulting in a coat that is too thick.
- B. If the Owner or the Architect determine that the substrate or undercoats are visible through the finish, or the finish appearance is shaded, or texture is uneven, then additional coats shall be applied, at no additional cost to the Owner, to provide an acceptable finish.
- C. If the Owner or Architect suspect that substrates were not properly prepared or improper primer/finishes were used, or that coatings were not applied to the recommend or specified rate or thickness, the Owner reserves the right to engage the testing and evaluation services of the either the Architect or an independent testing agency or both. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied:
 1. The Owner will engage the services of an independent testing agency to sample the paint material being used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in the presence of the Contractor.
 2. The testing agency will perform appropriate tests for the following characteristics as required by the Owner:
 - a. Quantitative materials analysis.
 - b. Abrasion resistance.
 - c. Apparent reflectivity including color and shading of undercoats.
 - d. Flexibility.
 - e. Washability.
 - f. Absorption.
 - g. Accelerated weathering.

- h. Dry opacity.
 - i. Accelerated yellowness.
 - j. Recoating.
 - k. Skinning.
 - l. Color retention.
 - m. Alkali and mildew resistance.
3. If test results show that material being used does not comply with specified requirements, that substrate was not properly prepared, the specified or recommended number of coats were not applied, or the thickness of each coat is not as specified or recommended, then the Contractor may be directed to stop painting, remove noncomplying paint, pay for testing, repaint surfaces coated with rejected paint, and remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are incompatible.

3.5 CLEANING

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 EXTERIOR PAINT SCHEDULE

- A. General: Review the specified painting systems and notify the Architect of any conflict between these systems and the painting manufacturer's recommendations. Where film thickness and spread rate are not listed, apply paints at manufacturer's published thickness and rate for specified paint.
- D. Wood (High Performance Acrylic Satin)
 1. Primer/Touchup: 1 coat Exterior Latex Wood Primer B42W8041 at 4 mils WFT
 2. Finish: 2 coats Resilience at 4 mils WFT per coat

- E. Wood (previously painted) High performance Acrylic Satin
 - 1. Primer: 1 coat Exterior Latex Wood Primer B42W8041 at 4 mils WFT
 - 2. Finish: 2 coats Resilience at 4 mils WFT per coat.

- D. Cement Board Siding (High Performance Acrylic Satin)
 - 1. Primer: Supplied Pre-primed
 - 2. Finish: 2 coats Resilience K43 Series at 4 mils WFT per coat.

- F. Ferrous Metals: High Performance Acrylic, Semi-Gloss
 - Primer: 1 coat Procryl Universal Primer B66W310 at 2-4 mils DFT per coat
 - Finish: 2 coats Sher-Cryl HPA B66-350 at 3 mils DFT per coat.

- G. Galvanized Steel : High Performance Acrylic, Semi-Gloss
 - 2 coats Sher-Cryl HPA B66-350 at 3 mils DFT per coat

- H. Composite and Simulated Wood (High performance Acrylic Semi-gloss)
 - 1. Primer: As recommended by the finish paint manufacturer and compatible with the column and the finish coat.
 - 2. Finish: 2 coats Resilience K43 Series at 4 mils WFT per coat.

- I. Composite Columns: (High performance Acrylic Satin)
 - 1. Primer: As recommended by the finish paint manufacturer and compatible with the column and the finish coat.
 - 2. Finish: 2 coats Resilience K43 Series at 4 mils WFT per coat.

END OF SECTION 09 90 00

SECTION 31 20 00 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes performing grading and fine grading to
 1. Re-sloping existing grade using existing soil or borrowed soil as required to provide positive drainage away from the structure and compacting.
 2. Compacting as required
 3. Leaving surfaces ready for grassing and landscaping

1.4 DEFINITIONS

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of pore water.
- D. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Architect. Unauthorized excavation, as well as remedial work directed by the Architect, shall be at the Contractor's expense.
- E. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

1.5 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

1.6 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.
- B. Comply with applicable requirements of NFPA 495--Explosive Materials Code.
- C. Testing and Inspection Service: Testing will be provided as described under Division 01 Section – “Quality Control” to provide a qualified independent geotechnical engineering testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing.
- D. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
- C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
- D. Backfill and Fill Materials: Satisfactory soil materials.
- E. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2 inch sieve and not more than 5 percent passing a No. 8 sieve.
- F. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Erosion Control
 - 1. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of water runoff, soil-bearing water runoff, or airborne dust to adjacent properties, walkways, roadways, and structures. The Contractor shall be responsible for all consequential damage and resulting cleanup and repairs caused by soil erosion and discharge of water runoff, and soil-bearing water runoff, or airborne dust to adjacent properties, walkways, roadways, and structures.
 - 2. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - 3. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- C. Lower water table to a minimum depth of at least 2 feet below bearing levels and excavation bottoms during construction.

3.3 EXCAVATION

- A. Classified Excavation: Excavation is classified and includes excavation to required subgrade elevations. Excavation will be classified as earth excavation or rock excavation as follows:
 - 1. Earth excavation includes excavation of existing grade visible on surface; and other items indicated or required to provide positive drainage away from the structure.

3.4 STABILITY OF EXCAVATIONS

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

3.5 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the Architect.
 - 1. Fill unauthorized excavations under other construction as directed by the Architect.
- B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Architect.

3.6 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.7 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 3 percent of optimum moisture content.
 - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
 - a. Stockpile or spread and dry removed wet satisfactory soil material.

3.8 TOPSOIL

- A. Obtain topsoil from designated stockpile or in the absence of a stockpile provide to meet requirements.

- B. Spread topsoil 4 to 6 inches deep on all graded areas unless shown or stated otherwise. If existing topsoil is insufficient for proper backfilling, coverage and compacting, then obtain, transport, and spread suitable topsoil for other approved and acceptable sources at not additional cost.
- C. Begin spreading operation on the steepest portion of the slope and proceed to the flattest portion of the slope.
- D. After removing the topsoil from the stockpile, re-dress and re-shape the stockpile areas smooth and provide for free draining of surface water.

3.9 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D698-00:
 - 1. Under Steps, Pavement, and Walkways: Compact the top 18 inches below subgrade and each layer of backfill or fill material at a minimum of 98 percent maximum dry density.
 - 2. Under Lawns or Unpaved Areas: Compaction for all other areas shall be a minimum of 95 percent maximum dry density for all structural fill.

3.10 GRADING

- A. General: Uniformly grade areas to a smooth, even surface, free from irregular surface changes. Slope as required to provide a positive drainage away from the structure. Remove ridges and ruts. Fill depressions. In areas to be grassed, remove stones larger than 1.5 inches in any direction. Comply with COMPACTION requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between existing adjacent grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
 - 3. Slope finish grade away from perimeter of structure, sidewalks, pads, and pavement, to ensure positive drainage away from structures, sidewalks, pads, and pavement. Slope a minimum of 2 percent (1/4 inch per foot).

3.11 FIELD QUALITY CONTROL

- A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable.
 - a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
 - b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Architect.
 2. Footing Subgrade: At footing subgrades, perform at least one test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of each subgrade with related tested strata when acceptable to the Architect.
 3. Building Slab, Parking Lot, and Sidewalk Areas: At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 5000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
 4. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.
 5. Open and Yard Areas: At each compacted layer or fill, perform at least one field in-place density test for every 15000 sq. ft. or less of open and yard areas, but in no case fewer than two tests.
 6. Future Building Slab Areas: Perform tests in same manner as previously described for Building Slab areas
- B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

3.12 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace material to depth directed by the Architect; reshape and recompact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal
 - 1. Transport surplus satisfactory soil to designated storage areas on the Owner's property. Stockpile or spread soil as directed by Architect.
 - 2. Remove waste material, trash, and debris, and legally dispose of it off the Owner's property.
 - 3. Remove unsatisfactory soil and legally dispose of it off the Owner's property.

END OF SECTION 31 20 00

SECTION 31 31 16 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes soil treatment for termite control.

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 01 Specification Sections.
- B. Product data and application instructions. Include unit cost of materials, application rates and estimated area to be treated.
- C. Certification that products used, comply with U.S. Environmental Protection Agency (EPA) regulations for termiticides.

1.4 QUALITY ASSURANCE

- A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for preparing substrate and application.
- B. Engage a professional pest control operator who is licensed according to regulations of governing authorities to apply soil treatment solution.
- C. Use only termiticides that bear a federal registration number of the EPA and are approved by local authorities having jurisdiction.
- D. South Carolina Pesticide Act: Comply with all provisions Section 27-1085 of the Rules and Regulations for the Enforcement of the South Carolina Pesticide Control Act (SC Law 46-13 and Amendments).
 - 1. Notify the Clemson University Pesticide Regulation and Controls Program prior to beginning treatment.

- E. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

1.5 JOB CONDITIONS

- A. Restrictions: Do not apply soil treatment solution until excavating, filling, and grading operations are completed, except as otherwise required in construction operations.
- B. To ensure penetration, do not apply soil treatment to frozen or excessively wet soils or during inclement weather. Comply with handling and application instructions of the soil toxicant manufacturer.
- C. Safety Requirements: Formulate, treat, and dispose of termiticides and their containers in accordance with label directions. Draw water for formulating only from sites designated by Owner, and fit the filling hose with a backflow preventer meeting local plumbing codes or standards. The filling operation shall be under the direct and continuous observation and supervision of a qualified representative of the applicator to prevent overflow. Secure pesticides and related materials under lock and key when unattended. Ensure that proper protective clothing and equipment are worn and used during all phases of termiticide application. Dispose of used pesticide containers off the site.
- D. Do not apply emulsion until location of heat pipes, duct, water, and sewer lines, and electrical conduits are known and identified. Caution must be taken to avoid puncturing and injection into these structural elements. Do not apply into electrical fixtures, switches, or sockets.
- E. Do not apply directly to water. Do not apply chemicals when winds will cause drifting from treated areas. Do not allow chemicals to drift to vegetation where bees are foraging.

1.6 WARRANTY

- A. Warranty: Furnish written warranty, executed by Applicator and Contractor, certifying that applied soil termiticide treatment will prevent infestation of subterranean termites. If subterranean termite activity is discovered during warranty period, Contractor will re-treat soil and repair or replace damage caused by termite infestation.
- B. Warranty Period: 5 years from date of Substantial Completion.

- C. The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT SOLUTION

- A. General: Use an emulsible, concentrated termiticide that dilutes with water, specially formulated to prevent termite infestation. Fuel oil will not be permitted as a diluent. Provide a solution consisting of one of following chemical elements.
- B. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Bifenthrin: Talstar One by FMC or a reviewed substitute by ICI Americas.
- C. Dilute with water to concentration level recommended by manufacturer.
- D. Other solutions may be used as recommended by Applicator if approved for intended application by local authorities having jurisdiction. Use only soil treatment solutions that are not harmful to plants.

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Ensure that all traces of cellulose-containing materials have been removed from the soil to be treated, and that soil conditions meet requirements of termiticide manufacturer.
- B. At the time of application, the soil shall be in a friable condition and shall have a sufficiently low moisture content to allow uniform distribution of the treatment solution throughout the soil. Do not make applications during or immediately following heavy rains or when conditions may cause runoff and create an environmental hazard.

3.2 APPLICATION

- A. General:
 - 1. Apply termiticide to soil material that will be covered by or lie immediately adjacent to the buildings and structures so as to provide a protective barrier against subterranean termites.

2. Apply termiticide as a coarse spray and in such manner as to provide uniform distribution onto the soil surface.
 3. Apply materials after preparations for placing slabs and other pertinent structures in area to be treated have been made.
 4. Apply materials before placement of a vapor barrier and at least 12 hours before concrete pouring.
 5. Where treated soil or fill material is not to be covered with a vapor barrier, exercise adequate precautions to prevent its disturbance. If soil or fill material has been disturbed after treatment, retreat as specified above before placement of slabs or other covering structures.
 6. Coordinate treatment of the soil on the exterior sides of foundation walls, grade beams, and similar structures with final grading and planting operations so as to avoid disturbance of the treated barriers by these operations.
 7. Allow no less than 12 hours for drying time after application before beginning concrete placement.
 8. Space rod holes 1 foot on center.
 9. Dig trenches 6 inches wide and do not extend below the foundation.
 10. Mix emulsion with soil as soil is being replaced in the trench.
- B. Application Rates: Revise specified application rates when recommended by the manufacturer. Apply soil treatment solution as follows:
1. Vertical Barriers: Establish vertical barriers around the base of foundations, plumbing, backfilled soil against foundation walls and other critical areas. Apply treatment by rodding or trenching. Apply treatment at a rate of 4 gallons per 10 linear feet per foot of depth. For example, a footing 3 feet deep requires 12 gallons of emulsion per 10 linear feet. Make outside and inside perimeter applications by rodding and/or trenching. When rodding from grade or from the bottom of a shallow trench, rod holes should be spaced in a manner that will allow for application of a continuous chemical barrier. Rod holes should not extend beneath the top of the footings. Rod from the base of a shallow trench to the top of the footings. Low-pressure spray (less than 50 psi) may be used to treat soil which will be replaced in the trench.
 2. Horizontal Barriers: Establish horizontal barriers in areas intended for covering such as floors. Apply with low pressure spray (less than 50 psi) at a rate of 1 gallon per 10 square feet to fill dirt. If fill is washed gravel or other coarse material, apply the emulsion at the rate of 1-1/2 gallons per 10 square feet. If concrete slabs cannot be

poured over soil the same day it has been treated, place a waterproof cover, such as polyethylene sheeting, over the soil. This is not necessary if foundation walls have been installed around the treated soil.

3. Foundation Walls and Grade Beams: Apply by rodding or trenching. Soil and fill material adjacent to and along entire inside perimeter of foundation walls, both sides of exterior sides of all walls and grade beams, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and chimney bases; and along entire outside perimeter, and from grade to bottom of footing shall be treated in a strip not less than 6 inches wide extending to top of footing or base of grade beam. The chemical emulsion shall be applied at a rate of 2 gallons per 5 linear feet, per foot of depth, with 1/3 of the application near level of top of footings and base of grade beams before any backfill is placed, 1/3 when half of backfill is placed, and the remainder when virtually all of the backfill has been placed. Openings in unit masonry walls with the top of course occurring at or just above grade level shall receive additional treatment of not less than 2 gallons of chemical emulsion per 5 linear feet. Avoid soil washout around footings.
4. Hollow Masonry Units of the Foundation: In preconstruction situations in which horizontal barrier application is not made to soil prior to pouring, the footing treatment may be made through masonry voids to establish a continuous chemical barrier at the top of the footing. Apply at the rate of 2 gallons per 10 linear feet. Apply the emulsion so it will reach the footing.
5. Utility Lines: All soil and fill materials about the perimeter of and adjacent to utility pipes, conduits, ducts, and other items extending through slab on grade shall be treated. Chemical emulsion shall be applied at a rate of not less than 2 quarts per linear foot in a strip 6 inches wide at grade level.
6. Before beginning concrete placement or the construction activities, allow no less than 12 hours for drying after application.
7. Under slab-on-grade structures, treat soil before concrete slabs are placed, using the following application rates:
 - a. Apply 4 gallons of chemical solution per 10 linear feet to soil in critical areas under slab, including entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers.
 - b. Apply 1 gallon of chemical solution per 10 sq. ft. as an overall treatment under slab and attached slab areas where fill is soil or unwashed gravel. Apply 1-1/2 gallon of chemical solution per 10 sq. ft. to areas where fill is washed gravel or other coarse absorbent material.

- c. Apply 4 gallons of chemical solution per 10 linear feet of trench for each 12 inches of depth from grade to footing, along outside edge of building. Dig a trench 6 to 8 inches wide along outside of foundation to a depth of not less than 12 inches. Punch holes to top of footing at not more than 12 inches o.c. and apply chemical solution. Mix chemical solution with the soil as it is being replaced in the trench.
8. At hollow masonry foundations or grade beams, treat voids at rate of 2 gallons per 10 linear feet , poured directly into the hollow spaces.
9. At expansion joints, control joints, and areas where slabs will be penetrated, apply at rate of 4 gallons per 10 linear feet of penetration.
10. Under crawlspace and basement structures, treat soil as follows:
 - a. Apply 4 gallons of chemical solution per 10 linear feet (5.1 L of chemical solution per meter) of trench along inside of foundation walls, along both sides of interior partitions, and around piers and plumbing. Do not apply an overall treatment in crawlspaces.
 - b. Apply 4 gallons of chemical solution per 10 linear feet (5.1 L of chemical solution per meter) of trench, for each 12 inches (300 mm) of depth from grade to footing, along outside of foundation walls.
 - c. Apply 1 gallon of chemical solution per 10 sq. ft. (4.1 L of chemical solution per sq. m) of soil surface as an overall treatment only where attached concrete platform are on fill or ground.
- C. Post signs in areas of application to warn workers that soil termiticide treatment has been applied. Remove signs after areas are covered by other construction.
- D. Reapply soil treatment solution to areas disturbed by subsequent excavation, landscape grading, or other construction activities following application.
- E. At completion of building and finish grading, retreat building perimeter.

3.3 FIELD QUALITY CONTROL

1. Samples:

The Architect may, at any time, and without prior notice, draw from stocks at the job site, samples of the pesticides used in this work. Should analysis performed by an independent testing laboratory indicate that such samples contain less than the amount of active ingredients specified on the level, work performed with such products shall be repeated, with pesticides conforming to this specifications, at no additional cost to Owner.

2. Application Report:

Upon completion of this work, submit a complete written report identifying brand name and manufacturer of pesticide, dilution, and method and rate of application used, and locations of application.

3.4 CLEANUP

1. Pesticide Disposal: If wastes cannot be disposed of according to label instructions, contact State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
2. Container Disposal:
 - a. Metal Containers: Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
 - b. Plastic Containers: Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, burning. If burned, stay out of smoke.
 - c. Glass Containers: Triple rinse. Then dispose of in a sanitary landfill or by other approved state and local procedures.

END OF SECTION 31 31 16

SECTION 32 92 02 -GRASS RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes repairing and replacing grassing that is damaged during the construction operations.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 31 Section "Site Clearing" for protection of existing trees and planting, topsoil stripping and stockpiling, and site clearing.
 - 2. Division 31 Section "Earthwork" for excavation, filling, rough grading, and subsurface aggregate drainage and drainage backfill.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product certificates signed by manufacturers certifying that their products comply with specified requirements.
 - 1. Manufacturer's certified analysis for standard products.
 - 2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Certification of grass seed from seed vendor for each grass-seed mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- D. Samples of each of the following:

1. 5 lb of mineral mulch for each color and texture of stone required for Project, in labeled plastic bags.
 2. Edging materials and accessories to verify color selected.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.
- F. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.
- G. The Contractor shall fully comply with all provisions of the Contract Documents including, but not limited to, providing and installing such entities as the products, materials, equipment, components, or systems that were proposed at the time bids were received. Except for extenuating circumstances as determined by the Architect, notification of not being able to meet any of the provisions of the Contract Documents or communicating conflicts in the Contract Documents to the Architect will not be considered after receipt of bids; and the Contractor shall fully comply with the Contract Documents at no increase in Contract Sum or Contract Time.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
- B. Seed: Deliver seed in original sealed, labeled, and undamaged containers.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Coordinate grass schedule with the Owner for types of grass to be planted, location of grass types, planting times, and maintenance.

1.5 COORDINATION AND SCHEDULING

- A. Coordinate installation of planting materials during normal planting seasons for each type of plant material required.

1.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Warrant the grass for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, abnormal weather conditions unusual for warranty period, or incidents that are beyond Contractor's control.

1.7 GRASS MAINTENANCE

- A. Begin maintenance of grass immediately after each area is planted and continue until acceptable grass is established, but for not less than the following periods:
- B. Maintain and establish grass by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth grass.
- C. Watering: Provide and maintain temporary piping, hoses, and grass watering equipment to convey water from sources and to keep grass uniformly moist to a depth of 4 inches.
 - 1. Water grass at the minimum rate of 1 inch per week.
- D. Mow grass as soon as there is enough top growth to cut with mower set at specified height for principal species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.
- E. Postfertilization: Apply fertilizer to grass after first mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. of grass area.

PART 2 - PRODUCTS

2.1 GRASS MATERIALS

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' "Rules for Testing Seeds" for purity and germination tolerances.

1. Seed Mixture: Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on Schedules at the end of this Section.

2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, 4 percent organic material minimum, free of stones 1 inch or larger in any dimension, and other extraneous materials harmful to plant growth.
 1. Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.

2.3 SOIL AMENDMENTS

- A. Lime: ASTM C 602, Class T, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent, with a minimum 99 percent passing a No. 8 sieve and a minimum 75 percent passing a No. 60 sieve.

2.4 FERTILIZER

- A. Bonemeal: Commercial, raw, finely ground; minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea-form, phosphorous, and potassium in the following composition:
 1. Composition: 1 lb per 1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
- D. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 10 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.5 MULCHES

- A. Organic Mulch: Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Shredded hardwood.
 2. Type: Ground or shredded bark.
 3. Type: Pine straw.
 4. Type: Salt hay or threshed straw.
 5. Type: Wood and bark chips.
 6. Type: Pine needles.
 7. Type: Peanut, pecan, and cocoa-bean shells.

2.6 EROSION-CONTROL MATERIALS

- A. Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- B. Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, 0.92 lb per sq. yd. minimum, with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas that have been damaged by construction activities to determine the extent of repair. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PLANTING SOIL PREPARATION

- A. Recondition existing grass areas damaged by Contractor's operations, including storage of materials or equipment and movement of vehicles. Also recondition grass areas where settlement or washouts occur or where minor regrading is required. Remove all ruts and other traces of activity and restore to a condition ready for grassing.
- B. Prepare areas damaged by construction activities as follows:
 1. Grade grass areas to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to

- areas that can be planted in the immediate future. Remove trash, debris, stones larger than 1-1/2 inches in any dimension, and other objects that may interfere with planting or maintenance operations.
2. Remove sod and vegetation from diseased or unsatisfactory grass areas; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations, including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.
 - a. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of it off the Owner's property.
 3. Where substantial grass remains, mow, dethatch, core aerate, and rake. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
 4. Where grass cannot be reconditioned, remove and dispose of existing grass, vegetation, and turf damaged during construction activities. Do not turn over into soil being prepared for grass.
 5. Till surface soil to a depth of at least 6 inches. Apply required soil amendments and initial fertilizers and mix thoroughly into top 4 inches of soil. Trim high areas and fill in depressions. Till soil to a homogenous mixture of fine texture.
 6. Before mixing seed, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
 7. Mix soil amendments and fertilizers with topsoil at rates indicated. Delay mixing fertilizer if planting does not follow placing of planting soil within a few days.
 8. Mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.
 - a. Mix lime with dry soil prior to mixing fertilizer. Prevent lime from contacting roots of acid-tolerant plants.
 9. Limit subgrade preparation to areas that will be planted in the immediate future.
 10. Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous materials.
 - a. Clean surface soil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - b. Remove waste material, including grass, vegetation, and turf, and legally dispose of it off the Owner's property.

11. Spread planting soil mixture to depth required to meet original thickness, grades, and after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen.
 - a. Place approximately 1/2 the thickness of planting soil mixture required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil mixture.
 - b. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.
12. Moisten prepared grassing areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.3 MULCHING

- A. Mulch backfilled surfaces of slopes, pits, trenches, planted areas.
- B. Weed-Control Barriers: Install the following weed-control barriers according to manufacturer's recommendations, before mulching. Completely cover area to be mulched, lapping edges a minimum of 6 inches.
 1. Material and Seam Treatment: Sheet polyethylene with seams taped.
- C. Organic Mulch: Apply the following average thickness of organic mulch and finish level with adjacent finish grades. Do not place mulch against trunks or stems.
 1. Thickness: 2 inches.

3.4 SEEDING

- A. Sow seed with a spreader or a seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in 2 directions at right angles to each other.
 1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
- B. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
- C. Protect seeded areas with slopes less than 1:6 against erosion by spreading straw mulch after completion of seeding operations. Spread uniformly at a minimum rate of 2 tons per acre to form a continuous blanket 1-1/2 inches loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into topsoil by suitable mechanical equipment.

3.5 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.

1. Mix slurry with nonasphaltic tackifier.

3.6 CLEANUP AND PROTECTION

- A. During grassing, keep pavements clean and work area in an orderly condition.
- B. Protect landscaping from damage due to grassing operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

3.8 SEED MIXTURES SCHEDULE

- A. Provide a seed mixture to match existing grass.

END OF SECTION 32 92 02