

Project Manual for

**University of South Carolina
Demolition/Renovation for Coliseum Project for Arena Level
Columbia, South Carolina**

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

State Permanent Improvement Project No. H27-Z167

Architect's Project No. U-787-14-1

Construction Documents

VOLUME I OF I

May 29, 2014

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USC'S ASBESTOS AND LEAD PAINT ABATEMENT - APPENDIX A

SE-310
REQUEST FOR ADVERTISEMENT

PROJECT NAME: USC Demolition/Renovation for Coliseum Project for Arena Level

PROJECT NUMBER: H27-Z167

PROJECT LOCATION: Columbia, 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: \$160,000 - 190,000

DESCRIPTION OF PROJECT: Remove retractable seating & section of the tiered concrete structure under the fixed seating in Coliseum to allow for expansion of the current arena court flooring. Spaces under tiered concrete structure to be demolished with minor reconfigurations. Bid Alternates includes painting at area of permanent seating demo, relocation of janitor's closet & removal of retractable seating on south wall of arena. Wood court floor work to be under separate contract.

A/E NAME: The Boudreaux Group, Inc.

A/E CONTACT: Kimberly Steele, AIA

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

City: Columbia

State: South Carolina ZIP: 29250-

EMAIL: ksteele@boudreauxgroup.com

TELEPHONE: 803-799-0247

FAX: 803-771-6844

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

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: Purchasing.sc.edu (See Facilities Construction/Solicitations & Awards)

PLAN DEPOSIT AMOUNT: \$0.00 **IS DEPOSIT REFUNDABLE:** Yes No

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

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

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DOWNLOAD ALL INFORMATION FROM THE USC PURCHASING WEBSITE, INCLUDING ALL APPLICABLE ADDENDA.

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

DATE: 6/12/2014 **TIME:** 2:00pm **PLACE:** USC Campus Planning Office 743 Greene St. Columbia, SC 29208

AGENCY: University of South Carolina

NAME OF AGENCY PROCUREMENT OFFICER: Juaquana Brookins

ADDRESS: Street/PO Box: 743 Greene Street

City: Columbia

State: South Carolina ZIP: 29208-

EMAIL: Jbrookin@fmc.sc.edu

TELEPHONE: 803-777-3596

FAX: 803-777-7334

BID CLOSING DATE: 6/24/2014 **TIME:** 2:00pm **LOCATION:** USC Campus Planning Office 743 Greene St. Columbia, SC 29208

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Juaquana Brookins

743 Greene Street

Columbia, SC 29201

MAIL SERVICE:

Attn: Juaquana Brookins

743 Greene Street

Columbia, SC 29201

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

APPROVED BY (Office of State Engineer): _____

DATE: _____

A701

Instruction to Bidders
(1997 Edition)

Original AIA Document on file at the office of
University of South Carolina
743 Greene Street
Columbia, South Carolina 29208

OSE FORM 00201

STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

OWNER: University of South Carolina

PROJECT NUMBER: H27-Z167

PROJECT NAME: USC Demolition/Renovation for Coliseum Project for Arena Level

PROJECT LOCATION: Columbia, SC

PROCUREMENT OFFICER: Juaquana Brookins

1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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

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

1.3. All provisions of 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.

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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.

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****2.16. Insert the following Sections 3.4.5 and 3.4.6:**

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

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

2.17. In Section 4.1.1, delete the word “forms” and substitute the words “SE-330 Bid Form.”**2.18. Delete Section 4.1.2 and substitute the following:**

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

2.19. Delete Section 4.1.3 and substitute the following:

4.1.3 Sums shall be expressed in figures.

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

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

2.21. Delete Section 4.1.5 and substitute the following:

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

OSE FORM 00201**STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****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-Attorney with the bid bond.

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

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

6.1 CONTRACTOR'S RESPONSIBILITY

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

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

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

2.37. *Insert the following Section 6.4*

6.4 CLARIFICATION

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

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

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

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

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

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: Receptionist Area

Building Where Posted: USC Campus Planning and Construction Office

Address of Building: 743 Greene Street Columbia, SC 29208

WEB site address (if applicable): <http://purchasing.sc.edu>

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

9.5 PROTEST OF SOLICITATION OR AWARD

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

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

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

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

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

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

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

None

END OF DOCUMENT



AIA[®] Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

University of South Carolina
743 Greene Street
Columbia, SC 29208

BOND AMOUNT: \$**PROJECT:**

(Name, location or address, and Project number, if any)

University of South Carolina Demolition/Renovation work for Coliseum Project for Arena Level
Project No. H27-Z167

ADDITIONS AND DELETIONS:

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

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

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

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

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

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such

**SE-330 – LUMP SUM BID
BID FORM**

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

BID SUBMITTED BY: _____
(Bidder's Name)

BID SUBMITTED TO: University of South Carolina
(Owner's Name)

FOR PROJECT: PROJECT NAME USC Demolition/Renovation for Coliseum Project for Arena Level
PROJECT NUMBER H27-Z167

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):* Remove retractable seating & section of the tiered concrete structure under the fixed seating in Coliseum to allow for expansion of the current arena court flooring. Spaces under tiered concrete structure to be demolished with minor reconfigurations. Bid Alternates includes painting at area of permanent seating demo, relocation of janitor's closet & removal of retractable seating on south wall of arena . Wood court floor work to be under separate contract. .

_____, which sum is hereafter called the Base Bid.

(Bidder - insert Base Bid Amount on line above)

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BID FORM**

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

ALTERNATE # 1 (Brief Description): Paint all non-glazed CMU walls, concrete beams, concrete columns as well as all mechanical, plumbing & electrical systems at newly exposed north wall of arena.

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): Provide new janitor's closet in existing mechanical room

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): Remove retractable seating located along south wall of arena.

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

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

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 BID FORM**

§ 7. LISTING OF PROPOSED SUBCONTRACTORS PURSUANT TO SECTION 3020(b)(i), CHAPTER 35, TITLE 11 OF THE SOUTH CAROLINA CODE OF LAWS, AS AMENDED – (See Instructions on the following page BF-2A)

Bidder shall use the below-listed Subcontractors in the performance of the Subcontractor Specialty work listed:

SUBCONTRACTOR SPECIALTY By License Classification and/or Subclassification (Completed by Owner)	SUBCONTRACTOR'S PRIME CONTRACTOR'S NAME (Must be completed by Bidder) BASE BID	SUBCONTRACTOR'S PRIME CONTRACTOR'S SC LICENSE NUMBER
N/A		
ALTERNATE 1		
N/A		
ALTERNATE 2		
N/A		
ALTERNATE 3		
N/A		

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

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.

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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 **80** calendar days from the Date of Commencement, subject to adjustments as provided in the Contract Documents.

b. **LIQUIDATED DAMAGES:** Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the sum of \$250.00 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
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BIDDER'S TAXPAYER IDENTIFICATION

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER: _____

OR

SOCIAL SECURITY NUMBER: _____

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

SC Contractor's License Number(s): _____

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

SIGNATURE

BIDDER'S LEGAL NAME: _____

ADDRESS: _____

BY: _____
(Signature)

DATE: _____

TITLE: _____

TELEPHONE: _____

EMAIL: _____

A101

Standard form of Agreement Between Owner
and Contractor
(2007 Edition)

Original AIA Document on file at the office of
University of South Carolina
743 Greene Street
Columbia, South Carolina 29208

OSE FORM 00501

STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

OWNER: University of South Carolina

PROJECT NUMBER: H27-Z167

PROJECT NAME: USC Demolition/Renovation for Coliseum Project for Arena Level

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: Sr. Project Manager

Address: 743 Greene Street Columbia, SC 29208

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

Email: Tnopal@fmc.sc.edu

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

Name: Ann Derrick

Title: Project Manager

Address: 743 Greene Street Columbia, SC 29208

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

Email: aderrick@fmc.sc.edu

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

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

Name: _____

Title: _____

Address: _____

Telephone: _____ **FAX:** _____

Email: _____

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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: Kim Steele, AIA
Title: Project Manager
Address: P.O. Box 5695 Columbia, SC 29250
Telephone: 803-799-0247 **FAX:** 803-771-6844
Email: ksteele@boudreauxgroup.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

A201

General Conditions of the Contract for
Construction
(2007 Edition)

Original AIA Document on file at the office of
University of South Carolina
743 Greene Street
Columbia, South Carolina 29208

OSE FORM 00811

STANDARD SUPPLEMENTARY CONDITIONS

OWNER: University of South Carolina

PROJECT NUMBER: H27-Z167

PROJECT NAME: USC Demolition/Renovation for Coliseum Project for Arena Level

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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STANDARD SUPPLEMENTARY CONDITIONS

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 under Section 3.8.2.1, as documented by invoices, and the allowance amounts.

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

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

- (a) Combined Single Limit \$1,000,000

(3) WORKER’S COMPENSATION:

- (a) State Statutory
- (b) Employers Liability \$100,000 Per Acc.
..... \$500,000 Disease, Policy Limit
..... \$100,000 Disease, Each Employee

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

3.82 *Delete Section 11.1.3 and substitute the following:*

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

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

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

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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 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: All inspections to be provided by the Owner

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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)*

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

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

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

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

Refer to Project Manual, Section 017700 'Closeout Procedures'

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

None

USC SUPPLEMENTAL GENERAL CONDITIONS
FOR CONSTRUCTION PROJECTS

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 students, faculty or staff is strictly prohibited-zero tolerance!
3. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to \$500 per violation.
4. Contractor ' s employees must adhere to the University ' s policy of maintaining a drug-free and smoke-free/tobacco free workplace.
5. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.
6. A welding permit must be issued by the University Fire Marshall before any welding can begin inside a building. Project Manager will coordinate.
7. Contractor must notify the University immediately upon the discovery of suspect material such as those potentially containing asbestos or other such hazardous materials. These materials **must not** be disturbed until approved by the USC Project Manager.
8. At the beginning of the project, the USC Project Manager will establish the Contractor ' s lay-down area. This area will also be used for the 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. Parking permits can be obtained at the USC Parking Office located in the Pendleton Street parking garage. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Vehicles parked in the lay down area (or designated parking areas) will be clearly marked or display a CPC furnished placard for identification.

9. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.
10. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.
11. For all projects over \$100,000, including IDC 's, an SE-395, Contractor Performance Evaluation, will be completed by the USC Project Manager and reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed and a Construction Performance rating will be established.
12. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied at least one times per week. Construction waste must not be placed in University dumpsters. THE CONSTRUCTION SITE MUST BE THOROUGHLY CLEANED WITH ALL TRASH PICKED UP AND PROPERLY DISPOSED OF ON A DAILY BASIS AND THE SITE MUST BE LEFT IN A SAFE AND SANITARY CONDITION EACH DAY. THE UNIVERSITY WILL INSPECT JOB SITES REGULARLY AND WILL FINE ANY CONTRACTOR FOUND TO BE IN VIOLATION OF THIS REQUIREMENT AN AMOUNT OF UP TO \$1,000 PER VIOLATION.
13. **Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until this is completed.**
14. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). As requested, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.
15. Tree protection fencing is required to protect existing trees and other landscape features to be preserved within a construction area. The limits of this fence will be evaluated for each situation with the consultant, USC Arborist and USC Project Manager. The tree protection fence shall be 5' high chain link fence unless otherwise approved by USC Project Manager. No entry or materials storage will be allowed inside the tree protection zone. A 4" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.
16. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following measures shall be taken: For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over areas impacted. For single loads over 9,000 lbs., two layers of 3/4" plywood is required.
17. For projects requiring heavy loads to cross walks tree root zones or lawns. A construction entry road consisting of 10' X 16' oak logging mates on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep matting structurally functional.

18. Any damage to existing landscaping (including lawn areas) will be remediated before final payment is made.
19. Orange safety fence to be provided by the contractor. (USC Arborist, Kevin Curtis may be contacted at 777-0033 or 315-0319)

Campus Vehicle Expectations

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 walkways must first receive the Landscape Manager's authorization. Violators may be subject to fines and penalties.
3. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.
4. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated space. 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 expense.
6. Vehicle drivers who park on landscape or drives must be able to produce written evidence of need or emergency requiring parking on same.
7. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
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 Parking Services or the Work Management Center.
10. Parking on campus is restricted to spaces designated by Parking Services 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.

Performance Bond

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

Name: _____

Address: _____

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

Name: _____

Address: _____

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

Name: University of South Carolina

Address: 743 Greene Street
Columbia, SC 29208

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

WHEREAS, Contractor has by written agreement dated _____ entered into a contract with Agency to construct
State Project Name: USC Demolition/Renovation for Coliseum Project for Arena
Level

State Project Number: H27-Z167

Brief Description of Awarded Work, as found on the SE-330, Bid Form:

Remove retractable seating & section of tiered concrete structure under the fixed seating in Coliseum to allow for expansion of the current arena court flooring. Spaces under tiered concrete structure to be demolished with minor reconfigurations. Bid Alternates include painting @ area of permanent seating demo, relocation of janitor's closet & removal of retractable seating on south wall of arena. Wood court floor work to be under separate contract.

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

Name: The Boudreaux Group

Address: P.O. Box 5695
Columbia, SC 29250

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

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

DATED this _____ day of _____, 2____ 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: University of South Carolina

Address: 743 Greene Street
Columbia, SC 29208

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

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

Project Name: USC Demolition/Renovation for Coliseum Project for Arena Level

Project Number: H27-Z167

Brief Description of Awarded Work, as found on the SE-330, Bid Form:

Remove retractable seating & section of tiered concrete structure under the fixed seating in Coliseum to allow for expansion of the current arena court flooring. Spaces under tiered concrete structure to be demolished with minor reconfigurations. Bid Alternates include painting @ area of permanent seating demo, relocation of janitor's closet & removal of retractable seating on south wall of arena. Wood court floor work to be under separate contract.

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

Name: The Boudreaux Group, Inc.

Address: P.O. Box 5695
Columbia, SC 29250

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

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

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

BOND NUMBER _____

CONTRACTOR

SURETY

By: _____
(Seal)

By: _____
(Seal)

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

Witness: _____

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

Labor and Material Payment Bond

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

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

SECTION 010070 - SPECIAL CONDITIONS

PART 1 – GENERAL

1.2 PERSONS AUTHORIZED TO SIGN DOCUMENTS

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

1.3 APPROVAL, BY ARCHITECT, OF SUBSTITUTE MATERIALS AND EQUIPMENT

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

1.4 PRE-CONSTRUCTION CONFERENCE

- A. Owner and Architect will administer pre-construction conference for execution of scheduling, items relating to Owner-Contractor agreement and exchange of submittals. The pre-construction conference will be held at the project prior to commencement of work. Contractor to provide a full list of subcontractors at this time.
- B. Owner and Architect will administer mobilization conference as part of the pre-construction conference for clarification of Owner and Contractor responsibilities in use of site and review of administrative procedures.

1.5 PROGRESS MEETINGS

- A. The Contractor shall schedule and administer project meetings throughout progress of the work.
- B. The Contractor shall make physical arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to Architect, participants, and those affected by decisions made at meetings.
- C. Attendance: Job Superintendent; major Subcontractors and Suppliers; Owner and Architect as appropriate to agenda topics for each meeting.
- D. Suggested Agenda: Review of work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions,

and other items affecting progress of work.

1.6 PREINSTALLATION CONFERENCES

- A. When required in individual specification Section, convene a preinstallation conference prior to commencing work of the Section.
- B. Require attendance of entities directly affecting, or affected by, work of the Section.
- C. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.7 PRODUCT DATA

- A. Submit only pages that are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to specification section and article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
- B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable to the work. Delete information not applicable.
- C. Submit number of copies of product data Contractor requires, plus three copies that will be retained by Architect, Engineer and Owner.

1.8 SAMPLES

- A. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified for custom finishes, indicating colors, textures, and patterns, for Architect selection. The Architect will coordinate colors of finish materials. When requested by the Architect, submit finish samples for related work necessary to the coordination of colors. Review of approval of any finish will commence only upon receipt of requested related finishes.
- B. Submit samples to illustrate functional characteristics of products including parts and attachments. Submit number of samples required by individual specification section.
- C. Label each sample with identification required for transmittal letter. Submit under AIA G810 or Architect/Engineer accepted form with transmittal letter. Identify project by title and number; identify contract by number. Identify work and product by specifications section and article number.
- D. Do not fabricate products or begin work that requires submittals until return of submittal with Architect acceptance.

1.9 MANUFACTURER'S INSTRUCTIONS

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

1.10 MANUFACTURER'S CERTIFICATES

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

1.11 RECEIVING MATERIALS FURNISHED BY OTHERS

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

1.12 MANUFACTURERS' FIELD SERVICES

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

1.13 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.14 CONSTRUCTION SET OF DRAWINGS AND PROJECT MANUAL

- A. The Architect/Engineer will incorporate all Addendum items into the Drawings and Project Manual to produce a Construction Set of Drawings and Project Manual with all revisions clearly identified, including the Addendum under which the revisions were made. The Contractor should include in his bid the cost of printing three (3) Construction Sets of the Drawings and Project Manuals which will include the incorporation of all Addendum items issued during the bidding period. These Construction Sets are to be used by the General Contractor and the Major Subcontractors as the official field and office sets and for the completion of as-built drawings. **The cost of printing three (3) construction sets can be estimated at \$75 per set. The contractor is to pay the actual cost directly to printer selected by the Architect where quality control of printing is being monitored.**

1.15 PACKAGING, TRANSPORTATION

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

1.16 DELIVERY AND RECEIVING

- A. Arrange deliveries of products in accordance with construction progress schedules. Allow time for inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with work and conditions at site; work of other Contractors, or Owner; limitations on storage space; availability of personnel and handling equipment; and Owner's use of premises.
- C. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
- D. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately on delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and requirements of Contract.
 - 2. Quantities are correct.
 - 3. Accessories and installation hardware are correct.
 - 4. Containers and packages are intact and labels legible.
 - 5. Products are protected and undamaged.

1.17 PRODUCT HANDLING

- A. Provide equipment and personnel to handle products, including those provided by Owner, by

methods to prevent soiling and damage.

- B. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging and surrounding surfaces.
- C. Handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.19 REQUEST FOR ELECTRONIC FILES

- A. Successful Contractor may purchase electronic CADD files directly from the Architect of Record for specific sheets pertinent to a particular trade and as is useful in the production of shop drawing documents for this project.
- B. Contractor is responsible for identifying the exact sheet(s) requested for reproduction by sheet number (s) using the attached form "Request for Electronic Dwg. Files" completed and signed.
- C. The cost per sheet varies depending on the number of sheets requested and is indicated on the attached Request for Electronic Files form. The cost is per the number of sheets and not per the number of electronic file that may compose those sheets.
- D. Upon receipt of the completed and signed Request for Electronic Dwg. File form and the appropriate check the Architect will forward to the subcontractor within 5 business days the electronic CADD files on CD or transmitted via Email or across a FTP (file transfer) site as is convenient to the subcontractor.

1.20 PERMITS AND FEES

- A. USC will issue the Building Permit. There will not be a cost to the Contractor.
- B. The Contractor is required to obtain, at its own cost all State and City of Columbia business licenses.

END OF SECTION 010070

(Attachments)

The **Boudreaux** Group

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

REQUEST FOR ELECTRONIC DWG FILES

DATE: _____

FROM: Name: _____

Address: _____

E-mail address: _____

PROJECT: **USC – Demolition/Renovation for Coliseum project for Arena Level**

In order to process requests for electronic DWG file(s) return this form along with a check made payable to: The Boudreaux Group. Please indicate the sheet number for each sheet requested.

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

ACKNOWLEDGED
AND SIGNED BY: _____

SHEET(S) REQUESTED: _____

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

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

- B. Related Requirements:

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

1.3 PROJECT INFORMATION

- A. Project Identification: University of South Carolina, Coliseum Renovations, State Project No. H27-Z167

1. Project Location: Assembly Street, Columbia, SC 29208.

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

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

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

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. The work includes all the work indicated by the Bid Documents, including Drawings and Project Manual, for the University of South Carolina, Coliseum Project for Arena Level, dated 5/29/14
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract. Refer to the DRAFT of the AIA Standard Form of Agreement between the Owner and Contractor included in the Project Manual.

1.5 WORK PROVIDED BY OWNER AND UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors providing concurrent work; separate vendors providing owner furnished and owner installed items; and with owner self-performing work, so work on those contracts and the owner performed work may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed by the owner and under separate contracts.
- B. Concurrent Work: Owner will award separate contract(s) or perform the work themselves for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
 - 1. Installation of court flooring in Coliseum at the Arena level.
 - 2. Installation of metal guard rails in Coliseum in the seating area.

1.6 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to area identified as Limits of Construction on the Civil Drawings. Do not disturb portions of Project site beyond areas in which the Work is indicated.
- C. Condition of **Existing Building**: Maintain existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations.

1.7 PHASED CONSTRUCTION

- A. The Work shall be conducted in one phase.

1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Demolition work within the Coliseum must occur during the following times:
 - Monday 9pm to 6am (Tuesday morning)
 - Tuesday 9pm to 6am (Wednesday morning)
 - Wednesday 6pm to 6am (Thursday morning)
 - Thursday 6pm to 6am (Friday morning)
 - Friday 6pm thru Monday 6am

All work must be suspended at the Coliseum from August 11th through the 20th and August 23rd to accommodate previously scheduled events.

- C. Existing Utility Interruptions: Do not interrupt utilities serving adjacent facilities occupied by Owner or others unless permitted under the following conditions.
 - 1. Notify Architect and Owner not less than 10 days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Architect and Owner not less than three days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations. Industry standard abbreviations are used and abbreviations are indicated on the cover sheets and other general drawing sheets under each discipline.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: Painting
1. Alternate: Paint exposed structure, CMU walls, & exposed mechanical, electrical & plumbing systems in area of permanent seating demolition.
- B. Alternate No. 2: Janitor's Closet
1. Alternate: Provide new janitor's closet in existing mechanical room.
- C. Alternate No. 3: South Retractable Seating
1. Alternate: Remove existing retractable seating located on south wall of Arena. Move to loading area on Park Street for removal by state surplus.

END OF SECTION 012300

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and

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

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Form: Use forms identified in the Contract, including General and Supplementary Conditions.
1. **All Change Orders shall be submitted on Form SE-480 "Construction Change Order" with appropriate documentation attached.**

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on forms identified in the Contract, including General and Supplementary Conditions.
1. **Refer to 00811-OSE article 3.68**

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Work Change Directive: Architect may issue a Work Change Directive on forms **AIA Document G714**. Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

- A. Coordination: Correlate line items in the Schedule of Values with Application for Payment forms with Continuation Sheets.
 - 1. Submit the Schedule of Values to Architect with initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Technical Specification Section
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.

- e. Date of submittal.
2. Submit draft of AIA Document G703 Continuation Sheets.
3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Change Orders (numbers) that affect value.
 - d. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 - 1. When an application shows completion of an item, submit final or full waivers.
 - 2. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 3. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 - 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule
 - 4. Products list.
 - 5. List of Contractor's staff assignments.
 - 6. List of Contractor's principal consultants.
 - 7. Copies of building permits.
 - 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 9. Initial progress report.
 - 10. Report of preconstruction conference.
 - 11. Certificates of insurance and insurance policies.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - 4. Requests for Interpretation (RFIs).
- B. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

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

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts

and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

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

1.5 SUBMITTALS

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

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

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

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

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

1.7 PROJECT MEETINGS

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

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Preparation of Record Documents.
 - k. Use of the premises and existing building.
 - l. Work restrictions.
 - m. Owner's occupancy requirements.
 - n. Responsibility for temporary facilities and controls.
 - o. Construction waste management and recycling.
 - p. Parking availability.
 - q. Office, work, and storage areas.
 - r. Equipment deliveries and priorities.
 - s. First aid.
 - t. Security.
 - u. Progress cleaning.
 - v. Working hours.
 3. Minutes: Record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at biweekly appropriate intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

- a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.8 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs:
1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files Adobe Acrobat PDF format and in Word format with area on the form for Architect/Engineer's response
- E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal in accordance with the requirements and general provisions of the Contract, including General and Supplementary Conditions.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at meetings.
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Field condition reports.
 - 3. Special Reports
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
 - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
 - 3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 4. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.

- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- G. Major Area: A story of construction, a separate building, or a similar significant construction element.
- H. Milestone: A key or critical point in time for reference or measurement.
- I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.4 SUBMITTALS

- A. Contractor's Construction Schedule: Submit three opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
- B. Field Condition Reports: Submit two copies immediately upon discovery of field condition differences.
- C. Special Reports: Immediately upon the occasion of an unusual event.

1.5 COORDINATION

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

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established from the Notice to Proceed to date of Substantial Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 - 4. Startup and Testing Time: Include appropriate times for start up and testing.
 - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 - 2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Fabrication.
 - e. Sample testing.
 - f. Deliveries.
 - g. Installation.
 - h. Tests and inspections.
 - i. Adjusting.
 - j. Curing.
 - k. Startup and placement into final use and operation.

3. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.
 - c. Completion of mechanical installation.
 - d. Completion of electrical installation.
 - e. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Completion of each Major Activity and Substantial Completion.
- F. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.2 REPORTS

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

2.3 SPECIAL REPORTS

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

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

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

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

END OF SECTION 013200

SECTION 013233 - 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. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
 - 3. Final completion construction photographs.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
 - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project area with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Format: Minimum: 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
 - 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Date photograph was taken.
 - b. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - c. Unique sequential identifier keyed to accompanying key plan.

1.4 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 JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 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: 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 file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Preconstruction Photographs: Before commencement and after completion of demolition, take photographs of Project site, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Take sufficient number of photographs to show existing conditions before starting the Work.
- D. Periodic Construction Photographs: Take sufficient photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of 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.

- F. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as project record documents. Architect will inform photographer of desired vantage points.
1. Do not include date stamp.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals under the conditions and procedures indicated 010070 Special Conditions.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 10 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 5 working days for review of each resubmittal.
 4. Concurrent Review: The following groups of submittals and samples are to be reviewed concurrently. The review period begins after all concurrent submittals have been received. Submittals are to include all submittals in these groups.
 - a. Exterior Finishes
 - b. Interior Finishes
 - c. Electrical
 - d. Plumbing
 - e. Mechanical
 - f. Fire Protection
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 6 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.

- E. Deviations: Cloud and note or otherwise specifically identify deviations from the Contract Documents on submittals.
- F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - 1. Additional copies submitted for maintenance manuals will not be marked with action taken and will not be returned.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form containing the following information:
 - 1. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specification Section number and title.
 - i. Drawing number and detail references, as appropriate.
 - j. Transmittal number
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Signature of transmitter.
 - 2. Record and identify relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "No Exceptions Taken or Make Corrections Noted"
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

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

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. See Section 010070 Special Conditions.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals.
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - 4. Submit Product Data before or concurrent with Samples.
 - 5. Number of Copies: Submit five copies of Product Data, unless otherwise indicated. Architect will return four copies. Mark up and retain one returned copy as a Project Record Document. Submit One additional copy if submittal requires engineer's review.

- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of Architect's CAD Drawings are otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Relationship to adjoining construction clearly indicated.
 - n. Seal and signature of professional engineer if specified.
 - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
 3. Number of Copies: Submit **four** copies of Submittal, unless otherwise indicated. Architect will return **three** copies. Mark up and retain one returned copy as a Project Record Document. Submit One additional copy if submittal requires engineer's review.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
- a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
- a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; and will return one sample set.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.
- F. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- G. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- H. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.

4. Number of Copies: Submit two copies of subcontractor list, unless otherwise indicated. Architect will return one copy.
 - a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 1. Number of Copies: Submit one copy of each submittal, unless otherwise indicated. Architect will retain the one copy.
 2. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- E. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- F. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- G. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- H. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- I. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

- J. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- K. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- L. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- M. **Material Safety Data Sheets (MSDSs):** Submit information directly to Owner; do not submit to Architect.
1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

2.3 DELEGATED DESIGN

- A. **Performance and Design Criteria:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. **Delegated-Design Submittal:** In addition to Shop Drawings, Product Data, and other required submittals, submit four copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S/ ACTION

- A. General: The Architect will return to the contractor without examination shop drawings, product data and other required submittals, which have not been prepared according to contract requirements. Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 1. No Exceptions Taken
 2. Make Corrections Noted
 3. Revise and Resubmit
 4. Rejected
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where

indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.

- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as

appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

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

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed

for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

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

1.7 QUALITY CONTROL

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

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made by the owner.
3. Retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be performed by the owner's testing agency and will be charged to Contractor.

- B. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

- C. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
6. Security and protection for samples and for testing and inspecting equipment at Project site.

- D. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."

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

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.

2. Indicate procedures for discarding water-damaged materials and replacing water-damaged Work.
- C. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 1. Locations of dust-control partitions at each phase of work.
 2. HVAC system isolation schematic drawing.
 3. Location of proposed air-filtration system discharge.
 4. Waste handling procedures.
 5. Other dust-control measures.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 TEMPORARY FACILITIES

- A. Field Offices, General: A field office is not required and the owner does not want a field office on site. The contractor is to utilize mobile phones and office equipment as may be needed and/or work remotely from the project site from Contractor's office.
 1. USC will provide access to a room inside the Coliseum for construction meetings with the Architect and/or Owner.
- B. Storage Sheds: Storage sheds are not required and the owner does not want storage sheds on site. Only deliver materials to site in a reasonable time frame ahead of installation. The Coliseum is reasonably secure. Remove equipment from the site at the end of each work day.
 1. The owner takes no responsibility for materials delivered and stored on site awaiting installation or for equipment that may be stored or left on the site.

PART 2 - EXECUTION

2.1 TEMPORARY UTILITY INSTALLATION

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

- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: The restroom facilities of the Coliseum can be used for toilet, and wash facilities for the construction personnel.
 - 1. The contractor is to keep facilities clean at all times. At the end of construction the contractor is to restore any damage to the existing facilities back to their condition before start of construction. The contractor is photograph or video tape the existing restrooms to demonstrate their condition before construction started.
- D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- E. Telephone Service: Provide the superintendent and project manager with a mobile phone for use on site.
 - 1. At a conspicuous location on site provide a list of important telephone numbers protected from the weather.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.
 - e. Architect's office.
 - f. Engineers' offices.
 - g. Owner's office.
 - h. Principal subcontractors' field and home offices.

2.2 SUPPORT FACILITIES INSTALLATION

- A. Temporary Use of Existing Roads and Paved Areas: Do not overload existing roads, curbs and paved areas with vehicle and equipment that will damage the roads, curbs and pavement and restore such pavement and surfaces to their original conditions after work is complete.
 - 1. Repair any damage to existing roads, curbs and paved areas.
 - 2. Remove any oil, sediment or other substance deposited by vehicle and equipment from roads and paved areas. Remove oil immediately.
- B. Parking: Refer to USC Supplemental General Conditions for Construction Projects for parking availability and requirements.
- C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.

- D. Project Signs: Unauthorized signs are not permitted.
- E. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Remove waste materials from Owner's property and legally dispose of them. Comply with progress cleaning requirements in Section 017300 "Execution."
 - 1. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 2. Do not allow waste materials that are to be disposed of to accumulate on-site.
 - 3. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 4. Do not burn waste materials.

2.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Project Site: The existing walls and doors in the Coliseum will act as the site perimeter. Bring any concerns with the adequacy of this enclosure to prevent unauthorized entrance, vandalism, theft, and similar violations of security to the Architect and Owner's attention before proceeding.
 - 1. The Owner will furnish the General Contractor with keys to access the Coliseum. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Keys are not to be duplicated by the contractor. The owner will issue the number of keys to the Contractor that is reasonable and is needed by the Contractor. The Contractor is to return all the keys issued by the Owner when construction is complete. Keep the Coliseum secure at all times. If doors are to be left open for access that is necessary for construction then the entry way is to be monitored by the construction personnel to assure unauthorized access by the public, students or staff.

2.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of facilities to minimize waste and abuse, limit availability of facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.

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

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
 - 2. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other

designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Written Approval by Architect.

- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: Action on Architect's Submittal Stamp
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Where products are accompanied by the term "as selected," Architect will make selection.
 4. Where products are accompanied by the term "match sample," sample to be matched is Architect's.

5. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or

texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 20 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect/Owner.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution offers Owner an advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - 2. Requested substitution does not require extensive revisions to the Contract Documents.
 - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 4. Substitution request is fully documented and properly submitted.
 - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 7. Requested substitution is compatible with other portions of the Work.
 - 8. Requested substitution has been coordinated with other portions of the Work.
 - 9. Requested substitution provides specified warranty.
 - 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Field engineering.
2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

- B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.

1.3 SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
1. Before construction, verify the location at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
 3. If existing utilities are uncovered, Contractor can recover cost to relocate as required. Contractor can also recover cost to adjust new utilities to meet or conform with the existing utilities as required.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Examine roughing-in for electrical systems to verify actual locations of connections before equipment and fixture installation.
 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings.. If discrepancies are discovered, notify Architect promptly.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level. Slope new pavement to follow slopes of the original pavement being replaced.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- G. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. At Substantial Completion, clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- J. Special Conditions: The Coliseum project site and work areas must be cleaned before the August 11-20, 2014 work suspension. An event will be occurring in the arena at this time. The August 23rd work suspension is the result of an event on the concourse and does not carry the same requirement.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.

- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION 017300

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Divisions 02 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

- A. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance.
- B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division 01 Section "Execution" for progress cleaning of Project site.
 - 3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 5. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion electronic construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Remove construction equipment and temporary utility connections from Project site, along with construction tools, and similar elements.
8. Complete final cleaning requirements, including touchup painting.
9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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

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

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following (List exceptions in the request):

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in maintenance of products.
5. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
6. Submit consent of surety to final payment (AIA G707).
7. Submit Affidavit of Payment and Debts and Claims (AIA G706).
8. Submit letter on company letterhead stating project clean-up has been completed including removal of temporary facilities and debris.
9. Submit a final liquidated damages settlement statement.
10. Submit specific warranties, guarantees, workmanship bonds, maintenance agreements, final certifications, and similar documents.
13. Submit project record drawings and specifications, operation and maintenance manuals, damage or settlement surveys and similar final record information.
14. Deliver tools, spare parts, extra stock, and similar items.
15. Provide letter on company letterhead stating no asbestos containing material has been installed in the project.

16. Submit Certificate of Final Occupancy.

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

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 - 2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
 - 3. Note related change-order numbers where applicable.
 - 4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
 - 5. Upon completion of construction, General Contractor and/or subcontractors shall turn over to Architect, a complete record set of drawings, showing all services exactly as built and installed. This includes a complete record of the exact manner in which electrical, piping and underground utilities, are installed. Dimensions shall be included where necessary to accurately locate piping and other items that will be below grade and that it may later be necessary to service.
- B. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.
 - 1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 - 2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 - 3. Note related record drawing information and Product Data.
 - 4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

- C. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.
 - 1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
 - 2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
 - 3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

- F. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
 - 1. Emergency instructions.
 - 2. Spare parts list.
 - 3. Copies of warranties.
 - 5. Recommended "turn-around" cycles.
 - 6. Inspection procedures.
 - 7. Shop Drawings and Product Data.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- C. Preparation: Submit three copies of list. Include name and identification of each area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of areas in sequential order.
 - 2. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

1.7 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.

- e. **Clean new and existing surfaces. Clean exposed exterior surfaces where work has been performed free of stains, films, and similar foreign substances.**
Avoid disturbing natural weathering of exterior surfaces.
 - f. Remove debris from limited access spaces.
 - g. Clean new and existing surfaces in project area.
 - h. Remove labels that are not permanent.
 - i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - j. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Product maintenance manuals.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.

PART 2 - PRODUCTS

2.1 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

- B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- C. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for general closeout procedures.
 - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit two set(s) of marked-up record prints.
- B. Record Specifications: Submit two paper copies of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit two paper copies of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of piping and conduits.
 - e. Locations of concealed internal utilities.
 - f. Changes made by Change Order or Construction Change Directive.
 - g. Changes made following Architect's written orders.
 - h. Details not on the original Contract Drawings.
 - i. Field records for variable and concealed conditions.
 - j. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as paper copy.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in an office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.

- B. Related Requirements:

- 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
 - 2. Section 017300 "Execution" for cutting and patching procedures.
 - 3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

- G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is included in Appendix A of the Project Manual for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.
 - 1. See Owner's work restrictions schedule in Section 011000 – Summary.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
 - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 2. Arrange to shut off utilities with utility companies.
 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain fire watch during and for at least 4 hours after flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.
 - 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Coordinate delivery site with Owner.
 - 5. Protect items from damage during transport and storage.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Structural Concrete (Beams and Seating – Precast & Poured in Place): Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Remove: Portion of concrete support beam, precast concrete seating platforms, existing guardrails, concrete block walls, doors, mechanical systems, plumbing systems and electrical systems as shown on drawings.
- B. Existing to Remain: All structure, seating and guardrails not shown as part of demolition in Coliseum.

- C. Dismantle: Existing individual seats in permanent seating area as identified on drawings and all retractable seating. Both types of seating will remain property of USC. Move to Park Street loading area for pick-up by State Surplus.

END OF SECTION 024119

SECTION 081113 - HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Standard and custom hollow metal frames.
- B. Related Sections:
 - 1. Division 09 Sections "Interior Painting" for field painting hollow metal doors and frames.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings.
- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.
- C. Custom Hollow Metal Work: Hollow metal work fabricated according to ANSI/NAAMM-HMMA 861.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 2. Locations of reinforcement and preparations for hardware.
 - 3. Details of each different wall opening condition.
 - 4. Details of anchorages, joints, field splices, and connections.
 - 5. Details of accessories.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to finish of factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (102-mm-) high wood blocking. Do not store in a manner that traps excess humidity.
 - 1. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

1.7 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Recycled Content of Steel Products: Provide products with average recycled content of steel products such that postconsumer recycled content plus one-half of preconsumer recycled content is not less than 75 percent.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Amweld Building Products, LLC.
 - 2. Benchmark; a division of Therma-Tru Corporation.
 - 3. Ceco Door Products; an Assa Abloy Group company.
 - 4. Curries Company; an Assa Abloy Group company.
 - 5. Deansteel Manufacturing Company, Inc.
 - 6. Firedoor Corporation.
 - 7. Fleming Door Products Ltd.; an Assa Abloy Group company.
 - 8. Habersham Metal Products Company.

9. Karpen Steel Custom Doors & Frames.
10. Kewanee Corporation (The).
11. Mesker Door Inc.
12. Pioneer Industries, Inc.
13. Security Metal Products Corp.
14. Steelcraft; an Ingersoll-Rand company.
15. Windsor Republic Doors.

2.3 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.
- D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.
 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.4 HOLLOW METAL FRAMES

- A. General: Standard Hollow Metal Frames may be provided where Manufacturers standard hollow metal doors and frames meet requirements. Provide Custom Hollow Metal Doors and Frames where Manufacturers standard hollow metal doors and frames do NOT meet requirements.

2.5 STANDARD HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Interior Frames: Fabricated from cold-rolled steel sheet.
 1. Fabricate frames with mitered or coped corners.
 2. Fabricate frames as full profile welded unless otherwise indicated.
 3. Frames for Wood Doors: 0.053-inch- (1.3-mm-) thick steel sheet.
- C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.6 CUSTOM HOLLOW METAL FRAMES

- A. General: Fabricate frames of construction indicated. Close contact edges of corner joints tight with faces mitered and stops butted or mitered. Continuously weld faces and soffits and finish faces smooth. Comply with ANSI/NAAMM-HMMA 861.
 - 1. Door Frames for Openings 48 Inches (1219 mm) Wide or Less: Fabricated from 0.053-inch- (1.3-mm-) thick steel sheet.
- B. Interior Frames: Fabricated from cold-rolled steel sheet.
- C. Hardware Reinforcement: Fabricate according to ANSI/NAAMM-HMMA 861 with reinforcing plates from same material as frame.
- D. Head Reinforcement: Provide minimum 0.093-inch- (2.3-mm-) thick, steel channel or angle stiffener for opening widths more than 48 inches (1219 mm).

2.7 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.8 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117 and ANSI/NAAMM-HMMA 861.
- C. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 4. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 6.
 - a. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
- D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8 and ANSI/NAAMM-HMMA 861.
 2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.9 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and HMMA 840.
 - 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - b. Install door silencers in frames before grouting.
 - c. Remove temporary braces necessary for installation only after frames have been properly set and secured.

- d. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
3. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors with wood-veneer faces.

1.3 SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction and trim for openings.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
 - 1. Indicate dimensions and locations of mortises and holes for hardware.
 - 2. Indicate dimensions and locations of cutouts.
 - 3. Indicate requirements for veneer matching.
 - 4. Indicate doors to be factory finished and finish requirements.
 - 5. Indicate fire-protection ratings for fire-rated doors.
- C. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- B. Source Limitations: Obtain flush wood doors from single manufacturer.
- C. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Quality Standards Illustrated" and WDMA I.S.1-A, "Architectural Wood Flush Doors."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.
- C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Algoma Hardwoods, Inc.
 - 2. Ampco, Inc.
 - 3. Buell Door Company Inc.
 - 4. Chappell Door Co.
 - 5. Eagle Plywood & Door Manufacturing, Inc.
 - 6. Eggers Industries.
 - 7. Graham; an Assa Abloy Group company.
 - 8. Haley Brothers, Inc.

9. Ideal Architectural Doors & Plywood.
10. Ipik Door Company.
11. Lambton Doors.
12. Marlite.
13. Marshfield Door Systems, Inc.
14. Mohawk Flush Doors, Inc.; a Masonite company.
15. Oshkosh Architectural Door Company.
16. Poncraft Door Company.
17. Vancouver Door Company.
18. VT Industries Inc.

2.2 DOOR CONSTRUCTION, GENERAL

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.
- B. Mineral-Core Doors:
 1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
 2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as follows:
 - a. 5-inch (125-mm) top-rail blocking.
 - b. 5-inch (125-mm) bottom-rail blocking, in doors indicated to have protection plates.
 - c. 5-inch (125-mm) midrail blocking, in doors indicated to have armor plates.
 - d. 5-inch (125-mm) midrail blocking, in doors indicated to have exit devices.
 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 DOORS FOR OPAQUE FINISH

- A. Interior Solid-Core Doors :
 1. Grade: Premium.
 2. Faces: Natural Birch
 3. Exposed Vertical Edges: Same species as faces.
 4. Core: Particleboard
 5. Construction: **Five** plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
 6. WDMA I.S.1-A Performance Grade: Heavy Duty.
 7. ratings, provide wood beads and metal glazing clips approved for such use.

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with requirements in NFPA 80 for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 - 2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

2.5 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.6 INSTALLATION

- A. Hardware: For installation, see Division 08 Section "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

2.7 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel framing systems for interior gypsum board assemblies.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 - 2. Protective Coating: hot-dip galvanized, unless otherwise indicated.
- B. Studs and Runners: ASTM C 645.
 - 1. Steel Studs and Runners:
 - a. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm).
 - b. Depth: As indicated on Drawings.
 - c. Provide deeper runner track as needed in location which are to receive SFRM in order to facilitate installation of studs.
- C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - 1. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm)

2.2 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.

3.3 INSTALLING FRAMED ASSEMBLIES

- A. Install studs so flanges within framing system point in same direction.
 - 1. Space studs as follows:
 - a. Single-Layer Application: 16 inches o.c. unless otherwise indicated.
- B. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
 - 1. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.

- b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- C. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Interior gypsum board.
2. Moisture resistant gypsum board.
3. Impact resistant gypsum board.

- B. Related Requirements:

1. Section 092216 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide one of the following:
 - 1. American Gypsum.
 - 2. Georgia-Pacific Gypsum LLC.
 - 3. Lafarge North America Inc.
 - 4. National Gypsum Company.
 - 5. PABCO Gypsum.
 - 6. Temple-Inland.
 - 7. USG Corporation.
- B. Gypsum Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered
 - 3. Type X at fire rated walls.
- C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered.
- D. Moisture and Mold-Resistant Gypsum Board: ASTM C 1396, C 473, C840, D 3273, G 21. With moisture- and mold-resistant core and paper surfaces. Use in all Restrooms and Janitor Rooms.
 - 1. Core: Noncombustible, moisture, and mold-resistant, 5/8 inch, Type X.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3273.

- E. Impact-Resistant Gypsum Board: ASTM C 1629/C 1629M.
 - 1. Core: 5/8 inch, Type X.
 - 2. Surface Abrasion: Meets or exceeds **Level 3** requirements.
 - 3. Surface Indentation: Meets or exceeds **Level 3** requirements.
 - 4. Single-Drop Soft-Body Impact: Meets or exceeds **Level 3** requirements.
 - 5. Hard-Body Impact: Meets or **Level 3** requirements according to test in Annex A1.
 - 6. Long Edges: Tapered.
 - 7. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 - 2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Corner bead: With notched or flexible flanges.

2.4 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use setting-type, sandable topping compound.
 - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 - 5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound, or drying-type, all-purpose compound, or high-build interior coating product designed for

application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

2.5 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Thermal and Sound Attenuation Insulation: As specified in Division 07 Section "Thermal Insulation".
- D. Acoustical Joint Sealant As specified in Division 07 Section "Joint Sealant".

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.

- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: As indicated on Drawings.
 - 2. Moisture- and Mold-Resistant Type: As indicated on Drawings.
 - 3. Impact Resistant: As indicated on Drawings.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
 - 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in other Section 099123 "Interior Painting."

3.5 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093000 - TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Ceramic tile.

1.3 -DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Full-size units of each type of trim and accessory for each color and finish required.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.8 EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.2 TILE PRODUCTS

- A. Tile Type; unglazed porcelain tile.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. American Olean; Division of Dal-Tile International Inc.
 - b. Daltile; Division of Dal-Tile International Inc.
 - c. Crossville, Mainstreet (Basis of Design)
 - 2. Composition: Porcelain.
 - 3. Module Size: As indicated on Drawings.
 - 4. Thickness: 3/8"
 - 5. Face: Plain.
 - 6. Surface: Slip-resistant, with abrasive admixture.
 - 7. Tile Color and Pattern: As selected by Architect and indicated on finish material schedule.
 - 8. Grout Color: As selected by Architect from manufacturer's full range.
 - 9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as indicated on Drawings.

2.3 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch (1.5 mm) above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch (12.7 mm) or less above adjacent floor surface.

2.4 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Mer-Kote Products, Inc.
 - j. Southern Grouts & Mortars, Inc.
 - k. Summitville Tiles, Inc.
 - l. TEC; a subsidiary of H. B. Fuller Company.
 2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
 - a.

2.5 GROUT MATERIALS

- A. Polymer-Modified Tile Grout: ANSI A118.7.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.

- h. MAPEI Corporation.
- i. Southern Grouts & Mortars, Inc.
- j. Summitville Tiles, Inc.
- k. TEC; a subsidiary of H. B. Fuller Company.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
- C. Temporary Protective Coating: Either product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 - 1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F (49 to 60 deg C) per ASTM D 87.
 - 2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
- D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does not change color or appearance of grout.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bonsal American; an Oldcastle company; Grout Sealer.
 - b. Bostik, Inc.; CeramaSeal
 - c. C-Cure; Penetrating Sealer 978.
 - d. Custom Building Products; Grout and Tile Sealer.
 - e. Jamo Inc.; Penetrating Sealer.
 - f. MAPEI Corporation; 004, Keraseal Penetrating Sealer for Unglazed Grout and Tile.
 - g. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
 - h. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
 - i. TEC; a subsidiary of H. B. Fuller Company; TA-256 Penetrating Silicone Grout Sealer.

2.7 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from

other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

- C. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
 - c. Tile floors composed of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- F. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Porcelain Tile: 1/8 inch

- G. Lay out tile wainscots to dimensions indicated.
- H. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- I. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile] [where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.
- J. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors and tile walls according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove latex-portland cement grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 - 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.5 INTERIOR TILE INSTALLATION SCHEDULE

A. Interior Floor Installations, Concrete Subfloor:

1. Tile Installation F113: Thin-set mortar; TCA F113.
 - a. Thin-Set Mortar: Latex portland cement mortar.
 - b. Grout: Polymer-modified unsanded grout.

END OF SECTION 093000

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Resilient base.
 - 2. Resilient molding accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.6 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE RB1:

- A. Manufacturers: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. Allstate Rubber Corp.
 2. Armstrong World Industries, Inc.
 3. Burke Mercer Flooring Products, Division of Burke Industries Inc.
 4. Flexco.
 5. Johnsonite; A Tarkett Company.
 6. Mondo Rubber International, Inc.
 7. Nora Systems, Inc.
 8. Roppe Corporation, USA.
 9. VPI, LLC, Floor Products Division.
- B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).
1. Group: I solid, homogeneous.
 2. Style and Location:
 - a. Style B, Cove
- C. Thickness: 0.125 inch (3.2 mm)
- D. Height: 4 inches (102 mm).
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: Job formed.
- G. Inside Corners: Job formed.
- H. Colors: From manufacturers standard colors.

2.2 RUBBER MOLDING ACCESSORY

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Roppe Corporation, USA.
 - 2. VPI, LLC, Floor Products Division.
 - 3. Johnsonite; A Tarkett Company.
- B. Description: Rubber carpet edge for glue-down applications, reducer strip for resilient flooring, joiner for tile and carpet, and transition strips.
- C. Profile and Dimensions: As indicated on Drawings.
- D. Locations: As indicated on Drawings.
- E. Colors and Patterns: As indicated on Drawings to match Cove base.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
 - 1. Adhesives shall have a VOC content of 50 g/L or less.
 - 2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.
 - 4. Moisture Testing: Proceed with installation only after substrates pass testing according to manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
 - b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until they are the same temperature as the space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.
 - 1. Apply one coat.
- E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Steel
 - 2. Wood
 - 3. Gypsum board
 - 4. Concrete
 - 5. Concrete masonry units (CMU)
- B. Related Sections include the following:
 - 1. Division 05 Sections for shop priming of metal substrates with primers specified in this Section.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Step coats on Samples to show each coat required for system.

1.4 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
 - 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
 - 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Benjamin Moore & Co.
 - 2. Duron, Inc.
 - 3. ICI Paints.
 - 4. Miller Paint.
 - 5. Porter Paints.
 - 6. PPG Architectural Finishes, Inc.
 - 7. Rose Tablert
 - 8. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

- A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
 2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
 3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 4. Flat Topcoat Paints: VOC content of not more than 50 g/L.
 5. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
 6. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 7. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L. Verify that three subparagraphs below are acceptable for LEED-CI before retaining.
 8. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.
- C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
 2. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1,2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.

- r. Mercury.
- s. Methyl ethyl ketone.
- t. Methyl isobutyl ketone.
- u. Methylene chloride.
- v. Naphthalene.
- w. Toluene (methylbenzene).
- x. 1,1,1-trichloroethane.
- y. Vinyl chloride.

D. Colors: As indicated on Drawings and Finish Materials Legend.

2.3 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

- 1. VOC Content: E Range of E3
- 2. Environmental Performance Rating: EPR 3.

B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

2.4 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

- 1. VOC Content: E Range of E1.

B. Quick-Drying Alkyd Metal Primer: MPI #76.

- 1. VOC Content: E Range of E3.

C. Rust-Inhibitive Primer (Water Based): MPI #107.

- 1. VOC Content: E Range of E3.
- 2. Environmental Performance Rating: EPR 3.

2.5 WOOD PRIMERS

A. Interior Latex-Based Wood Primer: MPI #39.

- 1. VOC Content: E Range of E3.
- 2. Environmental Performance Rating: EPR 3.

2.6 LATEX PAINTS

A. Interior Latex (Flat): MPI #53 (Gloss Level 1).

1. VOC Content: E Range of E3
 2. Environmental Performance Rating: EPR 2.5.
- B. Interior Latex (Eggshell): MPI #52 (Gloss Level 3).
1. VOC Content: E Range of E3
 2. Environmental Performance Rating: EPR 3.
- C. Interior Latex (Semigloss): MPI #54 (Gloss Level 5).
1. VOC Content: E Range of E3
 2. Environmental Performance Rating: EPR 4.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Gypsum Board: 12 percent.
 2. Concrete: 12 percent.
 3. Wood: 15 percent.
 4. Masonry (Clay and CMUs): 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- E. Wood Substrates:
1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 2. Sand surfaces that will be exposed to view, and dust off.
 3. Prime edges, ends, faces, undersides, and backsides of wood.
 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- F. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.
- G. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- H. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:
 - 1. Mechanical Work Outside Mechanical Rooms:
 - a. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
 - 2. Mechanical Work Inside Mechanical Rooms:
 - a. Uninsulated metal piping.
 - b. Uninsulated plastic piping.
 - c. Pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - d. Pipe hangers and supports.
 - e. Tanks that do not have factory-applied final finishes.
 - f. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
 - 3. Electrical Work Inside Electrical and Communication Rooms:
 - a. Plywood Backing Boards
 - b. Electrical equipment that is indicated to have a factory-primed finish for field painting.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Quick-Drying Enamel System: MPI INT 5.1A.
 - a. Prime Coat: Quick-drying alkyd metal primer.
 - b. Intermediate Coat: Quick-drying enamel matching topcoat.
 - c. Topcoat: Quick-drying enamel (semigloss).

2. Water-Based Dry-Fall System: MPI INT 5.1C.
 - a. Prime Coat: Quick-drying alkyd metal primer.
 - b. Topcoat: Waterborne dry fall.

3. Latex Over Alkyd Primer System: MPI INT 5.1Q.
 - a. Prime Coat: Quick-drying alkyd metal primer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (semigloss).

B. Dressed Lumber Substrates: Including architectural woodwork.

1. Latex System: MPI INT 6.3T.
 - a. Prime Coat: Interior latex-based wood primer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (semigloss).

C. Gypsum Board Substrates:

1. Latex System: MPI INT 9.2A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).

D. Concrete Substrates, Nontraffic Surfaces

1. Latex System MPI INT 3.1A:
 - a. Prime Coat: Primer, alkali resistant, water based.

 - b. Prime Coat: Latex, interior, matching topcoat.
 - c. Intermediate Coat: Latex, interior, matching topcoat.
 - d. Topcoat: Latex, interior, flat (MPI Gloss Level 1)

E. CMU Substrates:

1. Latex System MPI INT 4.2A:
 - a. Block Filler: Block filler, latex, interior/exterior.
 - b. Intermediate Coat: Latex, interior, matching topcoat.
 - c. Topcoat: Latex, interior, flat (MPI Gloss Level 1).

F. Special Finish Notes:

1. All exposed items including but not limited to mechanical equipment, ductwork, electrical conduits, sprinkler piping, and steel structure in “finished spaces” are to be painted. Verify with Architect before painting any special systems wiring such as data cabling. All rooms and spaces are considered “finished spaces” except mechanical, electrical, and data closets.

END OF SECTION 099123

USC's Asbestos and Lead Paint Abatement Appendix A

University of South Carolina Demolition/Renovation for Coliseum Project for Arena Level

The Asbestos and Lead Paint Survey and Abatement Documents included in this Appendix A has been produced by:

F&ME Consultants
3112 Devine Street
Columbia, SC 29250
(803) 254-4540

F&ME has produced these documents directly for USC, hired by and as a consultant to USC.

F&ME is not a consultant to The Boudreaux Group nor has contractual relationship with The Boudreaux Group for the work described in this Appendix A. As such, The Boudreaux Group does not take responsibility for or liability for the work described in the scope of this Appendix A. **These documents are ONLY being bound with the Project Manual for the Bidders' convenience upon USC's request.**

State Permanent Improvement Project No. H27-Z167

May 29, 2014

Contents of Appendix A:

1. Specification Section 02080 - Asbestos Abatement
2. Asbestos Containing Materials Data
3. USC Lead Management Plan

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.

- B. Related Requirements:

- 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
 - 2. Section 017300 "Execution" for cutting and patching procedures.
 - 3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

- G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is included in Appendix A of the Project Manual for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.
 - 1. See Owner's work restrictions schedule in Section 011000 – Summary.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
 - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 2. Arrange to shut off utilities with utility companies.
 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain fire watch during and for at least 4 hours after flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.
 - 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Coordinate delivery site with Owner.
 - 5. Protect items from damage during transport and storage.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Structural Concrete (Beams and Seating – Precast & Poured in Place): Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Remove: Portion of concrete support beam, precast concrete seating platforms, existing guardrails, concrete block walls, doors, mechanical systems, plumbing systems and electrical systems as shown on drawings.
- B. Existing to Remain: All structure, seating and guardrails not shown as part of demolition in Coliseum.

- C. Dismantle: Existing individual seats in permanent seating area as identified on drawings and all retractable seating. Both types of seating will remain property of USC. Move to Park Street loading area for pick-up by State Surplus.

END OF SECTION 024119

SECTION 081113 - HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Standard and custom hollow metal frames.
- B. Related Sections:
 - 1. Division 09 Sections "Interior Painting" for field painting hollow metal doors and frames.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings.
- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.
- C. Custom Hollow Metal Work: Hollow metal work fabricated according to ANSI/NAAMM-HMMA 861.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 2. Locations of reinforcement and preparations for hardware.
 - 3. Details of each different wall opening condition.
 - 4. Details of anchorages, joints, field splices, and connections.
 - 5. Details of accessories.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
 - 1. Provide additional protection to prevent damage to finish of factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (102-mm-) high wood blocking. Do not store in a manner that traps excess humidity.
 - 1. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

1.7 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Recycled Content of Steel Products: Provide products with average recycled content of steel products such that postconsumer recycled content plus one-half of preconsumer recycled content is not less than 75 percent.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Amweld Building Products, LLC.
 - 2. Benchmark; a division of Therma-Tru Corporation.
 - 3. Ceco Door Products; an Assa Abloy Group company.
 - 4. Curries Company; an Assa Abloy Group company.
 - 5. Deansteel Manufacturing Company, Inc.
 - 6. Firedoor Corporation.
 - 7. Fleming Door Products Ltd.; an Assa Abloy Group company.
 - 8. Habersham Metal Products Company.

9. Karpen Steel Custom Doors & Frames.
10. Kewanee Corporation (The).
11. Mesker Door Inc.
12. Pioneer Industries, Inc.
13. Security Metal Products Corp.
14. Steelcraft; an Ingersoll-Rand company.
15. Windsor Republic Doors.

2.3 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.
- D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.
 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.4 HOLLOW METAL FRAMES

- A. General: Standard Hollow Metal Frames may be provided where Manufacturers standard hollow metal doors and frames meet requirements. Provide Custom Hollow Metal Doors and Frames where Manufacturers standard hollow metal doors and frames do NOT meet requirements.

2.5 STANDARD HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Interior Frames: Fabricated from cold-rolled steel sheet.
 1. Fabricate frames with mitered or coped corners.
 2. Fabricate frames as full profile welded unless otherwise indicated.
 3. Frames for Wood Doors: 0.053-inch- (1.3-mm-) thick steel sheet.
- C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.6 CUSTOM HOLLOW METAL FRAMES

- A. General: Fabricate frames of construction indicated. Close contact edges of corner joints tight with faces mitered and stops butted or mitered. Continuously weld faces and soffits and finish faces smooth. Comply with ANSI/NAAMM-HMMA 861.
 - 1. Door Frames for Openings 48 Inches (1219 mm) Wide or Less: Fabricated from 0.053-inch- (1.3-mm-) thick steel sheet.
- B. Interior Frames: Fabricated from cold-rolled steel sheet.
- C. Hardware Reinforcement: Fabricate according to ANSI/NAAMM-HMMA 861 with reinforcing plates from same material as frame.
- D. Head Reinforcement: Provide minimum 0.093-inch- (2.3-mm-) thick, steel channel or angle stiffener for opening widths more than 48 inches (1219 mm).

2.7 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch (1.0 mm) thick, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.8 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117 and ANSI/NAAMM-HMMA 861.
- C. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 4. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 6.
 - a. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
- D. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- E. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8 and ANSI/NAAMM-HMMA 861.
 2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.9 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and HMMA 840.
 - 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - b. Install door silencers in frames before grouting.
 - c. Remove temporary braces necessary for installation only after frames have been properly set and secured.

- d. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
3. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors with wood-veneer faces.

1.3 SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction and trim for openings.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
 - 1. Indicate dimensions and locations of mortises and holes for hardware.
 - 2. Indicate dimensions and locations of cutouts.
 - 3. Indicate requirements for veneer matching.
 - 4. Indicate doors to be factory finished and finish requirements.
 - 5. Indicate fire-protection ratings for fire-rated doors.
- C. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- B. Source Limitations: Obtain flush wood doors from single manufacturer.
- C. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Quality Standards Illustrated" and WDMA I.S.1-A, "Architectural Wood Flush Doors."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in cardboard cartons and wrap bundles of doors in plastic sheeting.
- C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Algoma Hardwoods, Inc.
 - 2. Ampco, Inc.
 - 3. Buell Door Company Inc.
 - 4. Chappell Door Co.
 - 5. Eagle Plywood & Door Manufacturing, Inc.
 - 6. Eggers Industries.
 - 7. Graham; an Assa Abloy Group company.
 - 8. Haley Brothers, Inc.

9. Ideal Architectural Doors & Plywood.
10. Ipik Door Company.
11. Lambton Doors.
12. Marlite.
13. Marshfield Door Systems, Inc.
14. Mohawk Flush Doors, Inc.; a Masonite company.
15. Oshkosh Architectural Door Company.
16. Poncraft Door Company.
17. Vancouver Door Company.
18. VT Industries Inc.

2.2 DOOR CONSTRUCTION, GENERAL

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.
- B. Mineral-Core Doors:
 1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
 2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as follows:
 - a. 5-inch (125-mm) top-rail blocking.
 - b. 5-inch (125-mm) bottom-rail blocking, in doors indicated to have protection plates.
 - c. 5-inch (125-mm) midrail blocking, in doors indicated to have armor plates.
 - d. 5-inch (125-mm) midrail blocking, in doors indicated to have exit devices.
 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 DOORS FOR OPAQUE FINISH

- A. Interior Solid-Core Doors :
 1. Grade: Premium.
 2. Faces: Natural Birch
 3. Exposed Vertical Edges: Same species as faces.
 4. Core: Particleboard
 5. Construction: **Five** plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
 6. WDMA I.S.1-A Performance Grade: Heavy Duty.
 7. ratings, provide wood beads and metal glazing clips approved for such use.

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with requirements in NFPA 80 for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 - 2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.

2.5 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.6 INSTALLATION

- A. Hardware: For installation, see Division 08 Section "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

2.7 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel framing systems for interior gypsum board assemblies.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
 - 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 - 2. Protective Coating: hot-dip galvanized, unless otherwise indicated.
- B. Studs and Runners: ASTM C 645.
 - 1. Steel Studs and Runners:
 - a. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm).
 - b. Depth: As indicated on Drawings.
 - c. Provide deeper runner track as needed in location which are to receive SFRM in order to facilitate installation of studs.
- C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 - 1. Minimum Base-Metal Thickness: 0.018 inch (0.45 mm)

2.2 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.

3.3 INSTALLING FRAMED ASSEMBLIES

- A. Install studs so flanges within framing system point in same direction.
 - 1. Space studs as follows:
 - a. Single-Layer Application: 16 inches o.c. unless otherwise indicated.
- B. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
 - 1. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.

- b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- C. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Interior gypsum board.
2. Moisture resistant gypsum board.
3. Impact resistant gypsum board.

- B. Related Requirements:

1. Section 092216 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide one of the following:
 - 1. American Gypsum.
 - 2. Georgia-Pacific Gypsum LLC.
 - 3. Lafarge North America Inc.
 - 4. National Gypsum Company.
 - 5. PABCO Gypsum.
 - 6. Temple-Inland.
 - 7. USG Corporation.
- B. Gypsum Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered
 - 3. Type X at fire rated walls.
- C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch (15.9 mm).
 - 2. Long Edges: Tapered.
- D. Moisture and Mold-Resistant Gypsum Board: ASTM C 1396, C 473, C840, D 3273, G 21. With moisture- and mold-resistant core and paper surfaces. Use in all Restrooms and Janitor Rooms.
 - 1. Core: Noncombustible, moisture, and mold-resistant, 5/8 inch, Type X.
 - 2. Long Edges: Tapered.
 - 3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3273.

- E. Impact-Resistant Gypsum Board: ASTM C 1629/C 1629M.
 - 1. Core: 5/8 inch, Type X.
 - 2. Surface Abrasion: Meets or exceeds **Level 3** requirements.
 - 3. Surface Indentation: Meets or exceeds **Level 3** requirements.
 - 4. Single-Drop Soft-Body Impact: Meets or exceeds **Level 3** requirements.
 - 5. Hard-Body Impact: Meets or **Level 3** requirements according to test in Annex A1.
 - 6. Long Edges: Tapered.
 - 7. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
 - 2. Shapes:
 - a. Corner bead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Corner bead: With notched or flexible flanges.

2.4 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 - 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
 - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 - 3. Fill Coat: For second coat, use setting-type, sandable topping compound.
 - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 - 5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound, or drying-type, all-purpose compound, or high-build interior coating product designed for

application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

2.5 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Thermal and Sound Attenuation Insulation: As specified in Division 07 Section "Thermal Insulation".
- D. Acoustical Joint Sealant As specified in Division 07 Section "Joint Sealant".

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.

- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: As indicated on Drawings.
 - 2. Moisture- and Mold-Resistant Type: As indicated on Drawings.
 - 3. Impact Resistant: As indicated on Drawings.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
 - 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in other Section 099123 "Interior Painting."

3.5 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093000 - TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Ceramic tile.

1.3 -DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Full-size units of each type of trim and accessory for each color and finish required.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.8 EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.2 TILE PRODUCTS

- A. Tile Type; unglazed porcelain tile.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. American Olean; Division of Dal-Tile International Inc.
 - b. Daltile; Division of Dal-Tile International Inc.
 - c. Crossville, Mainstreet (Basis of Design)
 - 2. Composition: Porcelain.
 - 3. Module Size: As indicated on Drawings.
 - 4. Thickness: 3/8"
 - 5. Face: Plain.
 - 6. Surface: Slip-resistant, with abrasive admixture.
 - 7. Tile Color and Pattern: As selected by Architect and indicated on finish material schedule.
 - 8. Grout Color: As selected by Architect from manufacturer's full range.
 - 9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as indicated on Drawings.

2.3 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 - 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch (1.5 mm) above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch (12.7 mm) or less above adjacent floor surface.

2.4 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Mer-Kote Products, Inc.
 - j. Southern Grouts & Mortars, Inc.
 - k. Summitville Tiles, Inc.
 - l. TEC; a subsidiary of H. B. Fuller Company.
 - 2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
 - a.

2.5 GROUT MATERIALS

- A. Polymer-Modified Tile Grout: ANSI A118.7.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.

- h. MAPEI Corporation.
- i. Southern Grouts & Mortars, Inc.
- j. Summitville Tiles, Inc.
- k. TEC; a subsidiary of H. B. Fuller Company.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
- C. Temporary Protective Coating: Either product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 - 1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F (49 to 60 deg C) per ASTM D 87.
 - 2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
- D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does not change color or appearance of grout.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bonsal American; an Oldcastle company; Grout Sealer.
 - b. Bostik, Inc.; CeramaSeal
 - c. C-Cure; Penetrating Sealer 978.
 - d. Custom Building Products; Grout and Tile Sealer.
 - e. Jamo Inc.; Penetrating Sealer.
 - f. MAPEI Corporation; 004, Keraseal Penetrating Sealer for Unglazed Grout and Tile.
 - g. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
 - h. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
 - i. TEC; a subsidiary of H. B. Fuller Company; TA-256 Penetrating Silicone Grout Sealer.

2.7 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from

other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

- C. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
 - c. Tile floors composed of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- F. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Porcelain Tile: 1/8 inch

- G. Lay out tile wainscots to dimensions indicated.
- H. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- I. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile] [where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.
- J. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors and tile walls according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove latex-portland cement grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 - 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.5 INTERIOR TILE INSTALLATION SCHEDULE

A. Interior Floor Installations, Concrete Subfloor:

1. Tile Installation F113: Thin-set mortar; TCA F113.
 - a. Thin-Set Mortar: Latex portland cement mortar.
 - b. Grout: Polymer-modified unsanded grout.

END OF SECTION 093000

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Resilient base.
 - 2. Resilient molding accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet (3 linear m) for every 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.6 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE RB1:

- A. Manufacturers: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. Allstate Rubber Corp.
 2. Armstrong World Industries, Inc.
 3. Burke Mercer Flooring Products, Division of Burke Industries Inc.
 4. Flexco.
 5. Johnsonite; A Tarkett Company.
 6. Mondo Rubber International, Inc.
 7. Nora Systems, Inc.
 8. Roppe Corporation, USA.
 9. VPI, LLC, Floor Products Division.
- B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).
1. Group: I solid, homogeneous.
 2. Style and Location:
 - a. Style B, Cove
- C. Thickness: 0.125 inch (3.2 mm)
- D. Height: 4 inches (102 mm).
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: Job formed.
- G. Inside Corners: Job formed.
- H. Colors: From manufacturers standard colors.

2.2 RUBBER MOLDING ACCESSORY

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Roppe Corporation, USA.
 - 2. VPI, LLC, Floor Products Division.
 - 3. Johnsonite; A Tarkett Company.
- B. Description: Rubber carpet edge for glue-down applications, reducer strip for resilient flooring, joiner for tile and carpet, and transition strips.
- C. Profile and Dimensions: As indicated on Drawings.
- D. Locations: As indicated on Drawings.
- E. Colors and Patterns: As indicated on Drawings to match Cove base.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
 - 1. Adhesives shall have a VOC content of 50 g/L or less.
 - 2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.
 - 4. Moisture Testing: Proceed with installation only after substrates pass testing according to manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
 - b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until they are the same temperature as the space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum horizontal surfaces thoroughly.
 - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.
 - 1. Apply one coat.
- E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

USC's Asbestos and Lead Paint Abatement Appendix A

University of South Carolina Demolition/Renovation for Coliseum Project for Arena Level

The Asbestos and Lead Paint Survey and Abatement Documents included in this Appendix A has been produced by:

F&ME Consultants
3112 Devine Street
Columbia, SC 29250
(803) 254-4540

F&ME has produced these documents directly for USC, hired by and as a consultant to USC.

F&ME is not a consultant to The Boudreaux Group nor has contractual relationship with The Boudreaux Group for the work described in this Appendix A. As such, The Boudreaux Group does not take responsibility for or liability for the work described in the scope of this Appendix A. **These documents are ONLY being bound with the Project Manual for the Bidders' convenience upon USC's request.**

State Permanent Improvement Project No. H27-Z167

May 29, 2014

Contents of Appendix A:

1. Specification Section 02080 - Asbestos Abatement
2. Asbestos Containing Materials Data
3. USC Lead Management Plan

SECTION 02080- ASBESTOS ABATEMENT

PART 1 – GENERAL

RELATED DOCUMENTS:

- A. Documents affecting work of this Section include, but are not necessarily limited to, abatement design drawing AB-1 and the asbestos investigation data prepared by USC HAZMAT personnel, dated April 29, 2014, and supplemental data provided by F&ME Consultants, dated May 14 and 21, 2014, as well as the USC Lead Management Program located in the appendix of these specifications.

1.2 ASBESTOS ABATEMENT CONTRACTOR QUALIFICATIONS:

A. Asbestos Abatement Contractor's Qualifications:

1. A qualified firm that has not less than five (5) years' experience in the removal and proper disposal of asbestos-containing materials (ACM).
2. A qualified firm that has successfully completed the asbestos abatement on a minimum of three (3) projects over a period of five (5) years and where the scope of asbestos abatement work was over \$150,000.00.
3. A qualified firm that has not less than five (5) years experience in the removal (renovation/demolition) and proper disposal of lead-coated building components.

1.3 SCOPE OF WORK – SUMMARY

- A. The University of South Carolina (Owner) is planning to renovate the first floor athletic area of the Carolina Coliseum. Both asbestos-containing materials (ACM) and lead-coated materials (hereinafter LBP) will be impacted by the proposed renovations and will need to be removed prior to the start of renovation activities. For this reason, the scope of work for this abatement generally includes the removal and proper disposal of the ACM and LBP from within the limits of the abatement area as indicated on the provided drawing and referenced in these specifications. The intent of the project is the removal of all ACM and lead-coated materials from the specified area in anticipation of renovation activities.
- B. Abatement Contractor (Contractor) will be required to coordinate and communicate with the GC for location of and access to materials to be abated, to include the need or scheduling for installation of scaffolding, if utilized, prior to the start of abatement activities associated with the project included herein. All OSHA safety guidelines and regulations relative to worker protection shall be followed during all abatement activities. If used, Contractor shall ensure that the scaffolding is thoroughly cleaned following abatement.
- C. Contractor is to be aware that general demolition of non-ACM materials prior to establishing containment will be required in some areas. No ACM or lead-containing materials shall be impacted during this stage of work.

- D. Contractor is to be aware that containment measures will require the construction of temporary barriers adjacent to and above the subject area, requiring accessing the space above the existing ACM plaster ceiling. This area shall be accessed utilizing OSHA compliant means and methods.
- E. Prior to commencement of abatement activities, Contractor shall submit required documents as outlined in Section 1.18 herein.
- F. Contractor shall handle and dispose of all ACM and lead-coated materials utilizing work practices outlined by the OSHA's, SCDHEC's regulations and the USC Lead Management Plan.
- G. Contractor shall ensure that all work will be performed without sanding, scraping, abrading, or otherwise breaking the lead-containing bricks. Contractor shall manually remove the bricks intact, with no to minimal damage to the bricks.
- H. Cutting of the lead-contaminated bricks is also prohibited. When cutting of material is necessary during the removal process, it shall be performed in the mortar joints only.
- I. Contractor shall refer to the abatement plan for locations and limits of abatement activities.
- J. Prior to establishing containment or performing abatement work, Contractor shall thoroughly clean areas where abatement activities are to occur as required herein.
- K. Abatement methods utilized during friable abatement activities shall require full containment, to include the establishment of negative pressure and the cutting and capping of all existing HVAC systems leading into the abatement work areas prior to start of wet removal activities.
- L. The Contractor shall take into account emergency ingress and egress when completing his or her abatement work plan.
- M. In the event of a fiber release (airborne or amended water), Contractor will follow procedures as outlined in Section 3.2, part A of these specifications.
- N. The Contractor shall be responsible for verification of all site conditions and quantities associated with the abatement and removal tasks prior to the bid. Contractor shall utilize estimated quantities listed herein for base bid. Actual quantities shall be documented and confirmed during the abatement operations by the Contractor and Owner's Representative. Contractor shall submit along with bid add/deduct unit rates for the following abatement work tasks:
 - 1. Non-Friable ACM Abatement
 - a. ACM caulking associated with drinking water fountain (L.F. unit rate)
 - i. Includes removal and disposal of all ACM caulking as ACM.
 - b. ACM black mastic on fittings of fiberglass pipe insulation above ceilings (Per fitting unit rate)

- i. Includes removal and disposal of all ACM black mastic on fittings of fiberglass pipe insulation above ceilings within the limits of the abatement as ACM.
 2. Friable ACM Abatement
 - a. ACM textured acoustical ceiling surfacing material associated with the plaster ceiling in the central portion of the vestibule (S.F. unit rate)
 - i. Includes friable removal and disposal of all ACM textured acoustical material and associated plaster ceiling from the designated area as ACM.
 3. Lead Removal
 - a. Lead-glazed wall tile (S.F. unit rate)
 - i. Includes removal of all lead-glazed wall tile and disposal as lead-based paint waste.
- O. Contractor shall base bid for ACM and LBP abatement on the quantities listed below. Bid shall include all materials and labor necessary to remove, handle, transport and dispose of ACM and LBP within the structure and complete the abatement operations and selective demolition necessary to access ACM to be impacted by the renovations. During abatement operations, all quantities shall be verified by the Owner's Representative and the Contractor. Additions and deductions to the quantities included in the base bid shall be paid and/or credited based on the provided unit rates. ACM to be removed and/or impacted from the subject building structure during the abatement operations shall include the following:
 1. Non-Friable ACM Abatement
 - a. ACM caulking associated with drinking water fountain (Est. 10 L.F.)
 - b. ACM black mastic on fittings of fiberglass pipe insulation above ceilings (Est. 20 fittings)
 2. Friable ACM Abatement
 - a. ACM textured acoustical ceiling surfacing material associated with the plaster ceiling in the central portion of the vestibule (Est. 700 S.F.)
 3. Lead Removal
 - a. Lead-glazed wall tile (Est. 2,700 S.F.)

1.4 SCOPE OF WORK – ASBESTOS ABATEMENT ACTIVITIES

- A. The Contractor shall remove the following ACM from the first floor athletic level of the Carolina Coliseum:
 1. Non-Friable ACM Abatement
 - a. *ACM caulking associated with drinking water fountain* – Asbestos-containing caulking was found around the drinking water fountain located in the northwest corner of the renovation area. This material was used to seal around the existing unit which is attached to the wall. It is in a non-friable condition and shall be removed, handled and disposed of as an ACM.

- b. *ACM black mastic on fittings of fiberglass pipe insulation above ceilings* – This ACM mastic is located above the ceilings within the limits of the abatement. This material is found on fittings (i.e., elbows and joints) associated with fiberglass insulated chilled water supply and return lines. All fittings and affected insulation, both ACM and non-ACM, found above the suspended and hard ceilings within the limits of the abatement shall be removed and disposed of as ACM. Contractor shall coordinate with GC to determine which pipes are to be abated and left in place and which may be cut and removed as a function of the abatement task.

2. Friable ACM Abatement

- a. *ACM textured acoustical ceiling surfacing material associated with the plaster ceiling in the central portion of the vestibule* – The ceiling above the central portion of the vestibule is an asbestos-containing textured acoustical plaster ceiling. Abatement of this friable material shall be performed under full negative air containment. Contractor is to be aware that temporary barrier walls will be required in order to establish and/ or maintain negative air conditions in this area. Construction of these barriers shall be in compliance with local, state and federal regulations. Contractor shall ensure that construction activities associated with these barriers will not disturb existing ACM. If during the construction of appropriate containment barriers ACM are disturbed, resulting in a release of fibers or ACM debris outside of containment, Contractor shall clean the contaminated area in accordance with these specifications and governing regulations.

1.5 SCOPE OF WORK – LEAD REMOVAL

- A. As a function of the renovation activities, Contractor shall remove the lead-glazed wall tiles from the masonry block walls located on the first floor athletic level of the Carolina Coliseum. The surfaces of the masonry block walls are covered with ceramic tiles throughout the majority of the area to be renovated. These wall tiles are coated on the exposed side with a lead-containing glazing. Contractor shall implement means, methods and containment measures for the removal of lead-containing bricks (i.e., placement of polyethylene sheeting on ground surface below scaffolding, etc.) in a manner that will ensure that all debris generated during this work is captured and properly disposed of.
- B. Contractor shall establish procedures for the removal of lead glazed wall tile so as to minimize the generation of dust and exposure of workers to airborne concentrations of lead above the PEL. All dust and associated debris generated from the removal of lead-glazed wall tile shall be contained to the areas of the renovation. Following removal, Contractor shall clean the surrounding surfaces to ensure that no lead dust remains, to include HEPA vacuuming and wet wiping of all surfaces.
- C. Cutting of the lead-glazed blocks is prohibited, as is sanding, scraping, or the use of other abrasive techniques. Where necessary, cutting shall be performed in the mortar joints only. Contractor shall manually remove the bricks intact, with only minimal damage to the glazed surface of the bricks. All LBP waste and debris generated during this removal shall be properly

- containerized, transported and disposed of by Contractor. Contractor shall document and provide copies of all manifests for the disposal of all lead waste.
- D. Contractor shall have the option of utilizing general mechanical means for demolition/ removal of lead-glazed wall so long as the Contractor can provided a NEA that has been prepared within 12 months of start of the removal operations for those work practices. If a NEA cannot be provided, the Contractor shall follow procedures as shown in the USC Lead Management Plan. All procedures utilized shall meet the OSHA regulations for worker protection.
- E. Contractor shall ensure that workers performing the lead removal task or who are working in the area while the lead removal task is being performed have received and acknowledged receipt of, at a minimum, lead awareness training.
- F. Contractor shall utilize means and methods that take in to account and meet all regulatory requirements for worker protection (OSHA) and disposal (SCDHEC). All LBP debris shall be removed, handled and disposed of properly as per governing regulations pertaining to lead-based paint disposal and the USC Facility Services Lead Management Plan. Waste generated during abatement of LBP and/ or lead decontamination shall be containerized and turned over to USC HAZMAT for disposal as hazardous waste. Contractor is to provide containers for all waste generated during LBP abatement. Contractor shall coordinate with Owner the turnover of properly containerized LBP waste for disposal as a hazardous material.

1.6 CONTRACTOR'S DUTIES – SUMMARY

- A. The Contractor is to provide and pay for the following, except as specifically noted:
1. Labor, material, tools, required equipment (i.e. scaffolding, *etc.*) and machinery.
 2. Other facilities and services necessary for proper execution and completion of Work.
 3. Pay legally required sales, consumer and use taxes.
- B. Contractor will absorb costs for the following:
1. Permits
 2. Government fees
 3. Licenses
- C. Contractor shall provide notifications to appropriate entities based on applicable regulations.
- D. Contractor shall comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of Work.
- E. Contractor shall enforce strict discipline and good order among employees. Do not employ on Work, on Project or Work Site:
1. Unfit persons.
 2. Persons not skilled in assigned task.

1.7 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|------------|---|
| ANSI Z9.2 | (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems |
| ANSI Z87.1 | (1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection |
| ANSI Z88.2 | (1992) Respiratory Protection |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- | | |
|-------------|---|
| ASTM E 1368 | (1990) Visual Inspection of Asbestos Abatement Projects |
|-------------|---|

CODE OF FEDERAL REGULATIONS (CFR)

- | | |
|------------------|--|
| CFR 29 Part 1910 | Occupational Safety and Health Standards |
| CFR 29 Part 1926 | Safety and Health Regulations for Construction |
| CFR 40 Part 61 | National Emission Standards for Hazardous Air Pollutants |
| CFR 40 Part 763 | Asbestos |

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

- | | |
|-----------|---|
| R 61-86.1 | (2011) Standards of Performance for Asbestos Projects |
|-----------|---|

ENVIRONMENTAL PROTECTION AGENCY (EPA)

- | | |
|------------------|---|
| EPA 340/1-90-018 | (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance |
| EPA 340/1-90-019 | (1990) Asbestos/NESHAP Adequately Wet Guidance |

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

- | | |
|----------------------|--|
| NIOSH Pub No. 84-100 | (1984; Supple 1985, 1987, 1988 & 1990) |
| NIOSH | Manual of Analytical Methods |

UNDERWRITERS LABORATORIES (UL)

- | | |
|--------|---|
| UL 586 | (1990) High-Efficiency, Particulate, Air Filter Units |
|--------|---|

1.8 DEFINITIONS

A. Adequately Wet

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-019 that means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

B. Aggressive Method

1. Removal or disturbance of building material by sanding, abrading, grinding, or other method that breaks, crumbles, or disintegrates intact ACM.

C. Amended Water

1. Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

D. Asbestos

1. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

E. Asbestos-Containing Construction Material (OSHA):

1. Any manufactured construction material that contains more than one tenth of one percent asbestos by weight.

F. Asbestos-Containing Material (ACM)

1. Any material containing more than one percent asbestos

G. Asbestos Regulated Work Area

1. An asbestos regulated work area is an area established by the Contractor to demarcate areas where Class I, II and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

H. Authorized Person

1. Any person certified and authorized by the Contractor, Owners Representative and/or Owner and required by work duties to be present in regulated areas.

I. Category I Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy.

J. Category II Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material, excluding Category I Non-friable ACM, containing more than 1 percent asbestos as determined using the methods specified in Appendix A, Subpart F, CFR 40 Part 763,

Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

K. Class I Asbestos Work

1. Activities that involve the removal of thermal system insulation (TSI) and surfacing ACM.

L. Class II Asbestos Work

1. Abatement activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.

M. Class 2 Landfill

1. Landfill that accepts construction and demolition debris, to include lead-based paint waste generated from commercial facilities.

N. Competent Person

1. In addition to the definition in CFR 29 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate them.

O. Critical Barrier

1. One or more layers of 6-mil plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

P. Disturbance

1. Contact, which releases fibers from ACM or debris containing ACM. This term includes activities that disrupt the matrix of ACM, render ACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Q. Friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point

counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

R. Glove Bag

1. A term as defined by CFR 29 Part 1926.1101 that means a sealed compartment with attached inner gloves used for the handling of asbestos containing materials.

S. Hazardous Waste

1. Generation and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). If a waste exhibits toxicity, corrosivity, ignitability, or reactivity characteristics it is considered hazardous.

T. Intact

1. ACM which has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

U. Lead-based Paint Waste

1. Material such as wood, brick and metal that is painted with lead-based paint.

V. Lead-based Paint Residue

1. Residue that is generated from the removal (i.e., scraped, chipped, sandblasted or chemical) of lead-based paint from a structure.

W. Negative Initial Exposure Assessment

1. A demonstration by the Contractor that employee exposure during an operation is expected to be consistently below the PELs (TWA and Excursion Limit).

X. Non-friable ACM

1. A term as defined in CFR 40 Part 61, Subpart M and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in CFR 40 Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

Y. Time-Weighted Average (TWA)

1. The TWA is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air which represents the employee's 8-hour workday as determined by Appendix A of CFR 29 Part 1926, Section 1926.58.

1.9 DESCRIPTION OF WORK

- A. The work covered by this section includes the requirements for the removal, transportation, disposal, storage, containment of, and housekeeping activities involving asbestos containing materials, asbestos contaminated materials, and lead-containing materials located within the first floor athletic level of the Carolina Coliseum. CFR 40 Part 763 governs this abatement work.

1.10 SECURITY

- A. Security shall be provided for each asbestos regulated work area. A logbook shall be kept documenting entry into and out of the asbestos regulated work area. Entry into asbestos regulated work areas shall only be by personnel authorized by the Contractor, Owner's Representative and Owner. Personnel authorized to enter asbestos regulated work areas shall be trained, medically evaluated and wear the personal protective equipment, as required by this specification, for the specific asbestos regulated work area to be entered.

1.11 MEDICAL REQUIREMENTS

- A. Medical requirements shall conform to CFR 29 Part 1926, Section 1926.58.
 - 1. Medical Examinations
 - a. The Contractor shall provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour time weighted average. In the absence of specific airborne fiber data provide medical examination for all workers who will enter the work area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101(m) and, in addition, provide an evaluation of the individuals' ability to work in environments capable of producing heat stress in the worker.
 - 2. Medical and Exposure Records
 - a. The Contractor shall maintain complete and accurate records of employees' medical examinations for a period of 30 years after termination of employment as required by 29 CFR 1926.1101(n) and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary for Occupational Safety and Health, The Director of The National Institute for Occupational Safety and Health (NIOSH), authorized representatives of either of them, and an employee's physician upon the request of the employee or former employee.

1.12 TRAINING

- A. All Contractor personnel involved with asbestos and lead-based paint work must be trained and tested prior to any work, and shall be thoroughly familiar with the Contractor's standard operating procedure for the abatement work. All personnel shall undergo the specific medical examinations required by OSHA. The superintendent and the foreman shall be thoroughly familiar with all applicable regulations and practices for asbestos work and shall have

participated in at least two (2) abatement projects of similar size and scope within the past two (2) years. All personnel shall be in possession of valid respirator fit test paperwork.

1.13 RESPIRATORY PROTECTION PROGRAM

- A. The Contractor shall establish in writing, and implement a respiratory protection program in accordance with CFR 29 Part 1926, Section 1926.58, CFR 29 Part 1910, Section 1910.134, ANSI Z88.2, CGA G-7 and CGA G-7.1. The Contractor shall establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations encountered during the performance of the asbestos abatement work. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:
1. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.
 2. The standard operating procedures covering the selection and use of respirators. Respiratory selection shall be determined by the hazard to which the worker is exposed.
 3. Medical evaluation of each user to verify that the worker may be assigned to an activity where respiratory protection is required.
 4. Training in the proper use and limitations of respirators.
 5. Respirator fit testing (i.e., quantitative, qualitative and individual functional fit checks).
 6. Regular cleaning and disinfection of respirators.
 7. Routine inspection of respirators during cleaning and after each use when designated for emergency use.
 8. Storage of respirators in convenient, clean, and sanitary locations.
 9. Surveillance of work area conditions and degree of employee exposure (e.g., through air monitoring).
 10. Regular evaluation of the continued effectiveness of the respiratory protection program.
 11. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g., no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eyewear usage; prohibition of wearing contact lenses; etc.).
 12. Proper training in putting on and removing respirators.

1.14 HAZARD COMMUNICATION PROGRAM

- A. A hazard communication program shall be established and implemented in accordance with CFR 29 Part 1926, Section 1926.59.

1.15 SAFETY AND HEALTH COMPLIANCE

- A. In addition to detailed requirements of this specification, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos and lead-containing waste materials and with the applicable requirements of CFR 29 Part 1910, CFR 29 Part 1926, CFR 40 Part 61, Subpart A, and CFR 40 Part 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Owner shall apply.

1.16 COMPETENT PERSON

- A. When the contractor has employees engaged in Class I or II asbestos work, he shall have a Competent Person performing or supervising the following duties, as applicable:
1. Set up the regulated area, enclosure, or other containment;
 2. Ensure (by on-site inspection) the integrity of the enclosure or containment;
 3. Set up procedures to control entry to and exit from the enclosure and/or area;
 4. Supervise all employee exposure monitoring and ensure that it is conducted as required;
 5. Ensure that employees working within the enclosure and/or using glove bags wear protective clothing and respirators as required.
 6. Ensure through on-site supervision that employees set up and remove engineering controls, use work practices and personal protective equipment in compliance within all requirements;
 7. Ensure that employees use the hygiene facilities and observe the decontamination procedures specified;
 8. Ensure through on-site inspections that engineering controls are functioning properly and employees are using proper work practices; and,
 9. Ensure notification of other employees on site.

1.17 PERMITS, LICENSES AND NOTIFICATIONS

- A. The Contractor shall obtain all necessary permits and licenses in conjunction with the project asbestos abatement, transportation and disposal actions and timely notification furnished of such actions required by Federal, state, regional, and local authorities and as otherwise specified herein. The Contractor shall notify the SCDHEC and the Owner in writing at least 10 days prior to the commencement of work in accordance with CFR 40 Part 61, Subpart M, state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail - Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Owner prior to the commencement of work.
- B. The Contractor shall notify the Owner if any of the following occur:
 - 1. If the Contractor or any of its subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this Contract.
 - 2. Proceedings are commenced which could lead to revocation of related permits or licenses.
 - 3. Permits, licenses or other Owner authorizations relating to this Contract are revoked.
 - 4. Litigation is commenced which would affect this Contract.
 - 5. If the Contractor or any of its Subcontractors become aware that its equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.18 SUBMITTALS

- A. The following shall be submitted to the Owner and/or the Owner's Representative prior to the start of abatement operations:
 - 1. Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information.
 - 2. Abatement Work Plan
 - a. A written work plan outlining the project sequencing, methods, etc. must be accepted in writing by the Owners' Representative prior to start of any site work.
 - 3. Safety Plan
 - a. A written safety plan and comprehensive site-specific accident prevention plan prior to start of work. This plan must be accepted in writing by the Owners' Representative prior to start of any site work.

4. Initial Exposure Assessment

- a. The Contractor shall ensure that a “competent person” conducts an exposure assessment immediately before or at the initiation of all operations to determine expected exposures. The assessment must be based on the competent person’s review of all aspects of the Contractor’s performance doing similar jobs. Only if similar controls are used and the work supervised by the same or similarly trained personnel, may past data be relied on. The assessment shall include consideration of all observations, information or calculations that indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor that indicate the levels of airborne asbestos likely to be encountered on the job. However, the assessment may conclude that exposures are likely to be consistently below the PELs only as a conclusion of a “negative exposure assessment”. The Contractor shall monitor employees at the beginning of the project. The exposure assessment shall be updated to reflect actual conditions based on the results of exposure monitoring.

5. Employee Training and Certification of Worker Acknowledgement

The following training documentation for each employee to be engaged in the abatement work:

- a. Copy of certification of accreditation for completion of “workers” course (for workers) or “Contractor/Supervisor” Course (for Contractors and onsite supervisory staff) meeting the requirements of EPA’s CFR 40 Part 763 or more stringent state criteria, and all subsequent annual refresher training certificates meeting same requirements.
- b. A copy of a Contractor generated form entitled Certificate of Workers Acknowledgment shall be completed for each employee.
- c. Signatures of all workers performing lead removal tasks certifying that they have received, at a minimum, lead awareness training.

6. Encapsulant

A certificate stating that the selected encapsulant meets the applicable specified performance requirements.

7. Negative Exposure Assessment

- a. The Contractor may demonstrate that employee exposures will be below the PELs for asbestos and/ or lead by data, which conform to the following criteria:
 - i. Objective data demonstrating that the product or material containing asbestos minerals or lead dust or the activity involving such product or material cannot release airborne fibers or lead dust in concentrations exceeding the TWA and excursion limit under those work conditions having the greatest potential for releasing asbestos or lead dust; or

- ii. Where the Contractor has monitored prior asbestos jobs for the PEL and the excursion limit within 12 months of the current or projected job, the monitoring and analysis were performed in compliance with CFR 29 Part 1926.1101; and the data were obtained during work operations conducted under workplace conditions “closely resembling” the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor’s current operations, the operations were conducted by employees whose training and experience were no more extensive than that of employees performing the current job, and these data show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the TWA and excursion limit; or
- iii. The results of initial exposure monitoring of the current job made from breathing zone samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee covering the operations that are most likely during the performance of the entire asbestos and lead abatement job to result in exposures over the PELs.

8. Notifications

- a. The Owner shall be notified in writing 10 days prior to the start of asbestos work. A copy of the written notification shall be provided to any rental company concerning the intended use of rental equipment and the possibility of asbestos contamination, the decontamination procedures that will be used prior to the return of the equipment. A copy of the rental company’s written acknowledgment and agreement shall be included in the submittal.

9. Certificates

- a. Vacuum, Filtration and Ventilation Equipment
- b. Manufacturer’s certifications showing compliance with ANSI Z9.2 for:
 - i. Vacuums
 - ii. Water filtration equipment
 - iii. Ventilation equipment
 - iv. Other equipment required for containing airborne asbestos fibers.

10. Records

- a. Respirator Program
 - i. Records of the respirator program as required by ANSI Z88.2, CFR 29 Part 1910, Section 1910.134, CFR 29 Part 1926, Section 1926.58.
- B. The following shall be submitted to the Owner and/or the Owner’s Representative following completion of abatement operations:

1. Air Sampling Results

- a. Area Air Sampling (supplied by the Owner) and Personnel Air Sampling (provided by the Contractor). Air sample fiber counting shall be completed and results provided within 24 hours after completion of a sampling period. The Owner shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The air sampling results shall be documented on a daily air-monitoring log.

2. Pressure Differential Recordings

- a. Pressure differential recordings shall be provided daily on the same day collected. The Contractor's competent person shall review the readings prior to being submitted. The Owner shall be notified immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.005 fiber per cubic centimeter (f/cc) or background, whichever is higher.

3. Asbestos Waste Shipment

- a. Final completed copies of the Waste Shipment Record for all shipments of waste material as specified in CFR 40 Part 61, Subpart M and other required state waste manifest shipment records as specified herein. Detailed information of all asbestos waste disposals on the "MANDATORY WASTE SHIPMENT RECORD" form in accordance with revised CFR 40 Part 61, Subpart M. Such completed forms signed and dated by the agent of the landfill shall be submitted within 3 days after date of delivery of ACM to the landfill.

1.19 PERSONAL PROTECTIVE EQUIPMENT

A. Respirators

Respiratory protection shall be worn by all individuals inside the work area from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring:

1. Respirator Selection:

- a. Where respirators are used, the Contractor shall select and provide, at no cost to the employee, the appropriate respirator, and shall ensure that the employee uses the respirator provided.
- b. The Contractor shall select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR 11.
- c. The Contractor shall provide a tight fitting powered, air-purifying respirator in lieu of any negative-pressure respirator specified whenever:

- i. An employee chooses to use this type of respirator, and
- ii. This respirator will provide adequate protection to the employee.

B. Respirator Program:

1. Where respiratory protection is used, the Contractor shall institute a respirator program in accordance with CFR 29 Part 1910.134. The Contractor shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.
2. Employees who wear respirators shall be permitted to leave work areas to wash their faces and respirator face pieces whenever necessary to prevent skin irritation associated with respirator use.

C. Respirator Fit Testing

1. The Contractor shall ensure that the respirator issued to the employee exhibits the least possible face piece leakage and that the respirator is fitted properly. The Contractor shall perform either quantitative or qualitative face fit tests at the time of initial fitting and at least every 6 months thereafter for each employee wearing a negative-pressure respirator. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn or of full-face piece air purifying respirators where they are worn at levels at which half-face piece air purifying respirators are permitted. A qualitative or quantitative fit test conforming to CFR 29 Part 1926, Appendix C shall be conducted by the Contractor for each Contractor worker required to wear a respirator, and for the Owner and authorized visitors who enter an asbestos regulated work area where respirators are required to be worn.

D. Whole Body Protection

1. Personnel exposed to asbestos shall be provided with whole body protection, as specified herein and such protection shall be worn properly. The Contractor and competent person supervisor shall select and approve the whole body protection to be used. The competent person shall examine work suits worn by employees at least once per work shift for rips or tears that may occur during performance of work. When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the work suit shall be immediately replaced. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly laundered in accordance with CFR 29 Part 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan. A worker shall not remove asbestos abatement whole body protection from the work site to be cleaned.
2. Disposable-impermeable coveralls with a zipper front shall be provided. Sleeves shall be secured at the wrists, and foot coverings secured at the ankles.

3. Gloves shall be provided to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Where there is the potential for hand injuries (i.e., scrapes, punctures, cuts, etc.) an appropriate glove shall be provided and used.
4. An additional coverall similar to that required in paragraph Coveralls shall be provided when the abatement and control method employed does not provide for the exit from the asbestos regulated work area directly into an attached decontamination unit. Cloth work clothes shall be provided for wear under the protective coverall and foot coverings when work is being conducted in low temperature conditions. Cloth work clothes shall be either disposed of as asbestos contaminated material or properly laundered in accordance with CFR 29 Part 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan.
5. Cloth socks shall be provided and worn next to the skin. If rubber boots are not used, footwear and disposable foot coverings shall be provided. Rubber boots shall be used in moist or wet areas. Only rubber boots shall be removed from the asbestos regulated work area after being thoroughly decontaminated. All other protective foot covering shall be disposed of as ACM.
6. Hood type disposable head covering shall be provided. In addition, protective headgear (hard hats) shall be provided as required. Hard hats shall only be removed from the asbestos regulated work area after being thoroughly decontaminated.
7. Contact lenses shall not be worn in asbestos regulated work areas. When vision correction is necessary to perform the work task, prescription safety eyewear shall be used. Personnel engaged in asbestos abatement activities in the asbestos regulated work area shall wear fog-proof goggles when the use of a full face-piece respirator is not required. Eye protection provided shall be in accordance with ANSI Z87.1.
8. All other items of whole body protection shall be provided as required and approved by the Contractor.

1.20 DECONTAMINATION UNIT AND LOAD OUT UNIT

- A. Contractor shall take into account emergency egress issues related to the entire building when completing his abatement work plan. Decontamination and load out units will be sized, constructed and located so as to not impede ingress and egress to and from other portions of the building where abatement is not occurring.
- B. Decontamination and load out units shall be the sized, constructed and located so as to not impede the access to ACM to be abated. If access to ACM above the decontamination and load out units require abatement personnel to utilize them to gain access (i.e. get on top of the units) to the ACM, they shall be constructed meeting all OSHA safety guidelines.
- C. Provide each work area with separate personnel decontamination unit and equipment load out unit. Ensure that the decontamination unit is the only means of ingress and egress for the work area and that all equipment, bagged waste material and other material exit the work area only through the decontamination unit and equipment load out unit.

- D. All persons entering and exiting the work area will follow the entry and exit procedures required by the applicable regulations and these specifications. Process all equipment and material exiting the work area through the decontamination unit and equipment load out unit and decontaminate as required by the specifications.
- E. Construct walls and ceilings of decontamination unit and equipment load out unit airtight with at least 6 mil polyethylene sheeting and attach to existing building components or to a temporary framework. The decontamination unit and equipment load out unit may be combined if the size of the work area will not permit both.
- F. Use a minimum of two layers of 6-mil opaque polyethylene to cover floor under decontamination unit. Construct doors from overlapping polyethylene sheets so that they overlap adjacent surfaces. Weight sheets at bottom so that they quickly close after release. Put arrows on sheets showing direction of overlap and travel.
- G. Provide temporary water service connection to the decontamination unit and equipment load out unit. Provide backflow protection at the point of connection to the Owner's system.
- H. Water supply must be properly pressured and temperature balanced at shower discharge.
- I. Provide adequate temporary electric power with ground fault protection and overhead wiring throughout the decontamination unit and equipment load out unit. Provide a sub-panel for all temporary power in changing room.
- J. Provide a decontamination unit consisting of serial arrangement of clean room, showers room and equipment room. Provide adequately sized decontamination unit to accommodate the number of employees scheduled for the project. The center chamber of the three chamber decontamination unit will be fitted with as many portable walk through shower stalls as necessary so that all employees will be able to go through the entire decontamination procedure within 15 minutes. Construct decontamination unit of opaque or colored polyethylene for privacy. Construct decontamination unit so that it will not allow for parallel routes of exit without showering

1.21 WARNING SIGNS AND TAPE

- A. Contractor shall ensure that all personnel understand the warning signs. Warning signs and tape printed in English and Spanish shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Warning signs shall be in vertical format conforming to CFR 29 Part 1910, and CFR 29 Part 1926, minimum 500 by 360 mm 20 by 14 inches and displaying the following legend in the lower panel:
 - B. Legend Lettering
 - 1. Danger 3-inch Sans Serif Gothic or Block
 - 2. Asbestos 1-inch Sans Serif Gothic or Block

3. Cancer and Lung Disease Hazard 1-inch Sans Serif Gothic or Block
4. Authorized Personnel Only 1-inch Sans Serif Gothic or Block
5. Authorized Personnel Only 1-inch Gothic
6. Respirators and Protective Clothing are required in this Area 1-inch Gothic
7. Spacing between lines shall be at least equal to the height of the upper of any two lines. Warning tape shall be provided

1.22 WARNING LABELS

- A. Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels shall conform to CFR 29 Part 1926 and shall be of sufficient size to be clearly legible displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE
HAZARD

1.23 LOCAL EXHAUST SYSTEM

- A. A local exhaust system shall be provided in the asbestos regulated work area in accordance with ANSI Z9.2 and CFR 29 Part 1926. The system will provide at least 4 air changes per hour inside of the containment. The local exhaust system shall be operated 24 hours per day, until the asbestos regulated containment area is removed and shall be leak proof to the filter and equipped with HEPA filters. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.51 mm (0.02 inch) 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be monitored continuously, 24 hours per day, with an automatic recording instrument. In no case shall the building ventilation system be used as the local exhaust system for the asbestos regulated work area. Filters on local exhaust system equipment shall conform to ANSI Z9.2 and UL 586. Filter shall be UL labeled. The local exhaust system shall terminate out of doors. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.
- B. Prior to the start of the abatement the Contractor shall inspect all negative air machines and insure that all gaskets are in place, that all HEPA filters in the units are properly seated and mechanical brackets that secure the HEPA filters are intact. This inspection will be conducted in conjunction with the Owners Representative prior to the start of abatement activities. All

deficiencies associated with the negative air machines shall be repaired prior to the start of the abatement. All defective units shall be removed and replaced.

1.24 TOOLS

- A. Vacuums shall be leak proof to the filter, equipped with HEPA filters, be of sufficient capacity and provide the necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system or has otherwise been approved for use by the Owner. All residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from asbestos regulated work areas.

1.25 RENTAL EQUIPMENT

- A. If rental equipment is to be used, written notification shall be provided to the rental agency, concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.26 PERSONNEL AIR MONITORING EQUIPMENT (CONTRACTOR PROVIDED)

- A. The Contractor is responsible for all personnel sampling as outlined in Section 3.12 herein, and shall select and approve the air monitoring equipment to be provided and used by the Contractor for evaluation of personnel exposure levels to airborne asbestos fiber concentrations within the work area. The equipment shall include, but not be limited to:
 - 1. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit, which shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface,
 - 2. Standard 25 millimeter diameter, 0.8 micrometer micron pore size, mixed cellulose ester membrane filters and cassettes with nonconductive barrels and shrink bands, to be used with low flow pumps in accordance with CFR 29 Part 1926, for personal air sampling,
 - 3. Standard 25 millimeter diameter, 0.45 micrometer micron pore size, mixed cellulose ester membrane filters and cassettes with non-conductive barrels and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH Pub No. 84-100 Methods 7400 and 7402 and the transmission electric microscopy method specified at CFR 40 Part 763,
 - 4. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette,

5. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 degrees Fahrenheit to plus 140 degrees Fahrenheit and traceable to a National Institute for Standards and Technology (NIST) primary standard.

1.27 EXPENDABLE SUPPLIES

A. Glove Bag

1. Glove bags shall be provided as described in CFR 29 Part 1926. The glove bag assembly shall be prefabricated with a preprinted OSHA warning label and shall typically be constructed of 6 mil thick transparent polyethylene or polyvinyl chloride sheeting and at least two inward projecting long sleeves and an internal pouch. The glove bag shall be constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. The glove bag shall have sufficient capacity to hold removed materials and permit leak-tight sealing.

B. Duct Tape

1. Industrial grade duct tape shall be provided in 2 inch and 3 inch widths and shall be suitable for bonding sheet plastic and disposal containers specified herein.

C. Disposal Containers

1. Leak-tight disposal containers shall be provided for ACM generated as specified herein. Leak-tight means neither solids, liquids or dust can escape or spill out. All disposal containers shall be either pre-labeled or affixed with OSHA warning label as specified in CFR 29 Part 1926.

D. Disposal Bags

1. 6-mil thick leak-tight pre-labeled (OSHA warning label) bags shall be provided for placement of asbestos generated waste.

E. Leak-tight Wrapping

1. Two layers of 6-mil (minimum) thick polyethylene sheeting stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments and other materials too large to be placed in disposal bags. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

F. Fiberboard Drums

1. Fiberboard drums shall be provided if required by state or local requirements.

G. Cardboard Boxes

1. Heavy-duty corrugated cardboard boxes coated with plastic or wax to retard deterioration from moisture shall be provided if required by state and local requirements. Boxes shall fit into selected ACM disposal bags. Filled boxes shall be sealed leak-tight with duct tape.

H. Sheet Plastic

1. Sheet plastic shall be provided as specified herein and in the largest sheet size necessary to minimize seams, as indicated on the project drawings.

I. Polyethylene Sheet – General

1. 6-mil (minimum) thick polyethylene sheeting shall be clear, frosted and/or black and conform to ASTM D 4397.

J. Polyethylene Sheet – Flame Resistant

1. Where a potential for fire exists, 6-mil (minimum) thick flame-resistant polyethylene sheet shall be provided. Flame-resistant polyethylene film shall be frosted and/or black and shall conform to the requirements of NFPA 701.

K. Polyethylene Sheet-Reinforced

1. 6-mil thick reinforced polyethylene sheet shall be provided where high skin strength is required such as where it constitutes the only barrier between the asbestos regulated work area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between two layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

L. Viewing Inspection Window

1. Where feasible, a minimum of one clear 1/8-inch thick acrylic sheet, 18 inches by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. All such windows shall be sealed leak-tight with industrial grade duct tape.

M. Wetting Agents

1. Amended water shall meet the requirements of ASTM D 1331.

N. Removal Encapsulant

1. Removal encapsulant (a penetrating encapsulant) shall be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM equal to or greater than provided by amended water

O. Strippable Coating

1. Strippable coating found in aerosol cans, will be used to adhere to surfaces and to be removed cleanly by stripping at the completion of work. Since these coatings have a hydrocarbon-carrying agent, its use shall be confined to well-ventilated areas only.

P. Non-combustible Foam

1. All foam shall be HiltiCF 810 CJ Insulating Foam or an approved equivalent.

1.28 MATERIAL SAFETY DATA SHEETS

- A. Material safety data sheets (MSDS) shall be provided for all hazardous materials brought onto the work-site. One copy shall be provided to the Owner's Representative on-site and one copy shall be included in the Contractor's Hazard Communication Program.

1.29 OTHER ITEMS

- A. A sufficient quantity of other items shall be provided that may include, but not be limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of asbestos regulated containment work areas, UL approved temporary electrical equipment, material and chords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc.

1.30 PRECONSTRUCTION CONFERENCE

- A. The Contractor, and the Contractor's designated onsite "competent person," shall meet with the Owners Representative and Owner prior to beginning work at a preconstruction conference to discuss the details of the Contractor's Abatement Plan, including work procedures and safety precautions. Once accepted by the Owner's Representative and Owner, the Abatement Plan will be enforced as if an addition to the specification.

PART 2 - PRODUCTS

2.1 ENCAPSULANTS

- A. Encapsulant shall conform to USEPA requirements, shall contain no toxic or hazardous substances.

PART 3 - EXECUTION

3.1 GENERAL

- A. Asbestos abatement work shown on plans and drawings shall be performed as specified herein. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos regulated work area. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly

controlled conditions in conformance with CFR 29 Part 1926. Personnel of other trades not engaged in asbestos abatement activities shall not be exposed at any time to airborne concentrations of asbestos unless all the administrative and personal protective provisions as required by the Contractors Asbestos Abatement Plan are complied with. The building heating, ventilating, and air conditioning system shall be shut down, all openings to the system capped leading into the abatement work area.

- B. Electrical service shall be disconnected where necessary to facilitate wet removal. Temporary electrical service shall be provided by the Contractor as needed. Temporary power provided by the Contractor shall be adequate to power for the Owner's Representatives' air monitoring equipment.
- C. If an asbestos or lead-containing waste spill occurs outside of the regulated work area, work shall be stopped and the Owner's Representative and Owner shall be notified. The condition shall be corrected to the satisfaction of the Owner's Representative and Owner including air sampling, prior to resumption of work.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

- A. Asbestos and lead-containing material abatement work shall be performed without damage or contamination of adjacent work or areas. Where such work or area is damaged or contaminated as verified by the Owner's Representative using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Owner as deemed appropriate by the Owner's Representative. This includes inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all affected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated by the Contractor and the Owner's Representative, work may proceed.

3.3 FURNISHINGS, FIXTURES AND EQUIPMENT

- A. Removal of Furnishings and Equipment
 - 1. The Owner will remove all sensitive equipment and furniture from the work areas before asbestos and/ or lead abatement work begins.
- B. Items to Remain
 - 1. Contractor shall protect existing facilities throughout the facility that are not to be impacted by the renovation scope. Costs for repairs associated with damage incurred during abatement, will be at the Contractor's expense.

3.4 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

- A. Any building ventilating system supplying air into or returning air out of an asbestos regulated work area shall be shut down and isolated by lockable switch or other positive means in accordance with CFR 29 Part 1910, Section 1910.147, to prevent accidental start-up and

isolated by airtight seals to prevent contaminant spread through the system. Air-tight critical barriers shall be installed on all building ventilating openings that supply, or return air from the building ventilation system or serves to exhaust air from the building, that are located inside the asbestos regulated work area. The critical barriers shall consist of air-tight rigid covers for building ventilation supply and exhaust grills where the ventilation system is required to remain in service during abatement. Edges to wall, ceiling and floor surfaces shall be sealed with industrial grade duct tape.

3.5 PRECLEANING

- A. Surfaces shall be cleaned by HEPA vacuum and adequately wet wiped prior to establishment of containment.

3.6 ASBESTOS CONTROL AREA REQUIREMENTS

- A. The majority of tasks required during this project will be performed using glove bag and non-friable removal methods. However, if needed, regulated containment areas shall be established and maintained where necessary to complete the abatement work tasks. Viewing inspection window shall be installed on the wall of containment enclosure, as specified herein. The following procedures shall be performed sequentially and each activity shall be completed before proceeding to the next. Various steps may be omitted for an individual containment area when that work is not specified on the drawings.
 1. Furnishings in the asbestos regulated work area shall be cleaned, protected in place removed as specified herein.
 2. Tools, scaffolding, staging, and incidentals necessary for the work shall be placed in the area to be isolated prior to erection of work area enclosed containment.
 3. Building ventilating systems serving the work area shall be shutdown or isolated.
 4. Power to the asbestos regulated work area shall be locked-out by switching off all breakers serving power or lighting to this area in accordance with CFR 29 Part 1910.
 5. Surfaces shall be pre-cleaned as required herein.
 6. Personnel Decontamination Unit shall be installed as specified. Load-Out unit shall be installed as specified herein.
 7. Critical barriers shall be installed as required for building ventilation system and in the plenum space as required herein.
 8. Local exhaust ventilation system shall be installed as specified.

3.7 CLEAN-UP

- A. The Contractor shall maintain a clean work area by performing on a daily basis the following housekeeping functions at the end of each shift:

1. Loose ACM shall be prepared for disposal by packaging the waste and removing it from the work area to the load-out area.
2. Work area shall be HEPA vacuumed.
3. Polyethylene in work and high traffic areas shall be inspected and repaired.
4. Containment area shall be wet wiped if air sample results exceed prescribed level.

3.8 GLOVE BAG

- A. Asbestos regulated work areas shall be established as specified for glove bag abatement should it be required. Designated boundary limits for the asbestos work shall be established with rope or other continuous barriers and all other requirements for asbestos control areas shall be maintained including area signage and boundary warning tape as specified. Area monitoring of airborne asbestos fibers shall be conducted during the work shift at the designated boundary limits and personal air monitoring shall be performed for each worker engaged in asbestos handling (removal, disposal, transport and other associated work) at such frequency as specified in the Contractor's air monitoring plan. If the concentration of asbestos fibers monitored at the breathing zone of the workers or within the designated limits at any times exceeds 0.01 f/cc or the pre-abatement level, whichever is greater, work shall be stopped and the Owner shall be notified. The Contractor shall correct the condition to the satisfaction of the Owner's Representative and Owner to include visual inspection and air sampling. The Owner's Representative and Owner will only allow resumption of work upon notification. If adjacent areas outside the regulated work area are contaminated, the Contractor at his expense, shall clean the contaminated area, visually inspect the cleaned area, and conduct air monitoring.

3.9 ASBESTOS HANDLING PROCEDURES

- A. The Contractor shall employ proper handling procedures in accordance with CFR 29 Part 1926 and CFR 40 Part 61, Subpart M and the specification requirements herein. The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Hazard Abatement Plan including but not limited to details of construction materials, equipment, and handling procedures. The following task descriptions detail the required abatement handling technique.
 1. Removal of ACM From Interior Architectural System
 - a. After completion of all asbestos removal work, surfaces from which asbestos containing materials have been removed shall be wet wiped or sponged clean, or cleaned by some equivalent method to remove all visible residue. After the gross amounts of asbestos have been removed from every surface, all remaining visible accumulations of asbestos on floors shall be collected using plastic shovels, rubber squeegees, rubber dustpans and HEPA vacuum cleaners as appropriate to maintain the integrity of the containment barrier. When all insulation has been removed, workmen shall use HEPA vacuum cleaners to vacuum every surface. Particular attention shall be paid to those surfaces or locations that could harbor accumulations or residual asbestos dust.

2. Sealing Contaminated Items Designated for Disposal

- a. Contaminated architectural, mechanical, and electrical appurtenances and other contaminated items designated for removal shall be coated with an asbestos lockdown encapsulant at the demolition site before being removed from the asbestos control area. These items need to be vacuumed prior to application of the lock-down encapsulant.
- b. The asbestos lockdown encapsulant shall be tinted a contrasting color. It shall be spray-applied by airless method. Thoroughness of sealing operation shall be visually gauged by the extent of colored coating on exposed surfaces.

3.10 FINAL CLEANING AND PRE-VISUAL INSPECTION

- A. The regulated abatement work area shall be cleaned at the completion of the abatement by collecting, packing, and storing all gross contamination. A final cleaning shall include HEPA vacuum and wet cleaning of all exposed surfaces and equipment in the asbestos regulated work area. Upon completion of the cleaning, the Contractor's competent person shall conduct a pre-visual inspection of the cleaned area in preparation for the final inspection to be conducted with the Owners Representative. The Contractor shall re-clean, as necessary. Upon completion of the final cleaning, the Contractor and the Owners Representative shall conduct a final visual inspection of the cleaned work area in accordance with ASTM E 1368 and document the results on the Final Cleaning and Visual Inspection. If the Owners Representative rejects the abatement area as not meeting final cleaning requirements, the Contractor shall re-clean as necessary and have a follow-up inspection with the Owners Representative. Re-cleaning and follow-up re-inspections by the Owners Representatives shall be at the Contractor's expense.

3.11 LOCKDOWN

- A. Prior to removal of plastic barriers and after clean up of gross contamination and final visual inspection, a post removal (lockdown) encapsulant shall then be spray applied to foundation walls, underside of floors, and all vertical and horizontal surfaces within the work area. The abatement area shall include but not be limited to constructed enclosures, barriers, polyethylene sheeting that covers any furnishings, and equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and onsite constructed decontamination unit.

3.12 AIR MONITORING

Air Monitoring by the Contractor:

- A. The Contractor shall provide daily 8-hour TWA PEL and daily 30-minute Excursion Limit personal breathing zone air monitoring in accordance with and in addition to 29 CFR 1926.1101(f), including all amendments, and Appendix A of the OSHA standard within the work sites throughout all asbestos work site enclosure, material stripping, removal, cleaning encapsulation operations, or any other activities which might disturb asbestos-containing materials to insure that the workers are adequately protected at all times.

- B. Samples shall be collected by calibrated pumps whose flow rates can be determined to an accuracy of plus or minus 5 percent. Calibrate pumps both prior to and after each use with a representative filter in line.
- C. Analysis of samples shall be done in accordance with 29 CFR 1926.1101(f) and Appendix A of the OSHA standard. The results of all samples shall be posted outside the containment area within 48 hours of sampling and maintained there until the project has been concluded. This data shall include both the results of individual samples and the results of 8 hour TWA and 30-minute Excursion Limit determinations. Posted results shall include a synopsis of work activities for which the results are representative. Records shall be made of each employee's personal monitoring results and the employee shall be notified of these results within 15 days either individually or by posting them in a central location in accordance with 29 CFR 1926.1101(f).
- D. All analytical results from the Contractor's air monitoring shall be posted at the work site entrance as soon as they become available and not more than 48 hours from the time in which the samples were taken.

Air Monitoring by the Owner:

- A. The Owner shall provide the services of an independent testing laboratory with qualified analysts and appropriate equipment to conduct sample analyses of area air samples using the methods prescribed in CFR 29 Part 1926 Section 1926.58 to include NIOSH Pub No. 84-100 Method 7400. Sampling performed in accordance with CFR 29 Part 1926 Section 1926.58 shall be performed by the Owners Representative. The Owners Representative shall perform final clearance air sampling utilizing Phase Contrast Microscopy (PCM) analysis. For environmental quality control and final air clearance NIOSH Pub No. 84-100 Method 7400 (PCM) with optional confirmation of results by NIOSH Pub No. 84-100 Method 7402 Transmission Electron Microscopy (TEM) the mandatory EPA TEM Method specified at CFR 40 Part 763 shall be used. For environmental and final clearance samples, sampling will be conducted at a sufficient velocity and time to collect a sample volume necessary to establish the limit of detection of the method used at 0.01 f/cc. Asbestos fiber concentration confirmation of the total fiber concentration results of environmental, quality assurance and final air clearance samples, collected and analyzed by NIOSH Pub No. 84-100 Method 7400, may be conducted.

1. Sampling Prior to Asbestos Work

- a. The baseline air sampling shall be established one day prior to the masking and sealing operations for each abatement area site. The background shall be established by performing area sampling in similar but uncontaminated sites in the building. Pre-abatement (NIOSH Pub No. 84-100 Method 7400, PCM, and EPA TEM Method specified at CFR 40 Part 763) air samples shall be collected at a minimum of three locations. These locations are: outside the building, inside the building, but outside the abatement area perimeter and inside each abatement area. One sample shall be collected for every 185 square meters 2,000 square feet of floor space. At least two sample locations shall be collected outside the building. The PCM samples shall be

analyzed immediately; and if any result in fiber concentration greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH Pub No. 84-100 Method 7402 (TEM) at Owner expense.

2. Sampling During Asbestos Abatement Work

- a. The Owner shall provide area air sampling as indicated in CFR 29 Part 1926 Section 1926.58, and meet state and local requirements. Area air sampling shall be conducted at least once every shift, close to the work in the containment area, outside the clean room entrance to the containment area, (outside air lock for mini and modified containment areas), inside the clean room (inside the air lock for mini and modified containment areas), outside the load-out unit exit, if used, and at the exhaust discharge point of the local exhaust system.

3. Sampling After Final Clean-Up (Clearance Sampling)

- a. Prior to conducting final air clearance sampling, the Contractor and the Owners Representative shall conduct a final visual inspection of the Contractor's final cleanup of the abated asbestos regulated work area as specified. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the Owners Representative. The Owners Representative will provide area sampling of airborne fibers using air sampling techniques as defined in the EPA 560/5-85-024 or as otherwise required by Federal or state requirements.

4. Air Clearance Failure

- a. Should clearance-sampling results fail to meet the final clean-up requirements, the Contractor shall pay all costs associated with all required re-cleaning, re-sampling and analysis until final clean-up requirements are met.

3.13 SITE INSPECTION

- A. While performing asbestos removal work, the Contractor shall be subject to onsite inspection by the Owners Representative who may be assisted by or represented by quality assurance, safety and industrial hygiene personnel. If the work is found to be in violation of this specification, the Owner or his representative will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

3.14 CLEAN-UP AND DISPOSAL

A. Housekeeping

1. Surfaces of the regulated work area shall be kept free of accumulation of asbestos-containing debris. Meticulous attention shall be given to restricting the spread of dust and debris during the abatement activities. HEPA filtered vacuum cleaners shall be used. The space shall not be blown down with compressed air.

B. Title to Materials

1. Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.

C. Collection and Disposal of Asbestos

1. Asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing, shall be collected and placed in sealed leak-tight, containers (e.g. double 6-mil plastic bags), sealed 6-mil double wrapped polyethylene sheet, sealed fiberboard boxes or other approved containers. Waste within the containers must be wetted in case the container is breeched. A warning and Department of Transportation (DOT) label shall be affixed or preprinted on each bag. Waste asbestos material shall be disposed of at an EPA, state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Owner. Procedure for hauling and disposal shall comply with CFR 40 Part 61, Subpart M, and state, regional, and local standards.

D. Asbestos Waste Shipment Record

1. The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in CFR 40 Part 61, Subpart M and other required state waste manifest shipment records within 3 days of delivery to the landfill.

APPENDIX A

Asbestos Containing Materials Data, Carolina Coliseum

Performed by USC HAZMAT personnel, Dated: April 29, 2014

**EMSL Analytical, Inc.**

706 Grallin Street, Kernersville, NC 27284
 Phone/Fax: (336) 992-1025 / (336) 992-4175
<http://www.EMSL.com> greensborolab@emsl.com

EMSL Order: 021402280
 CustomerID: UNSC62
 CustomerPO:
 ProjectID:

Attn: **Darryl Washington**
University of South Carolina
743 Greene Street
Columbia, SC 29208


Phone: (803) 777-7000
 Fax: (803) 777-3990
 Received: 04/30/14 10:15 AM
 Analysis Date: 4/30/2014
 Collected:

Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1 021402280-0001	Caulking/ Putties	Beige/Cream Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
2 021402280-0002	Caulking/ Putties	Beige/Cream Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
3 021402280-0003	Caulking/ Putties	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
4 021402280-0004	Textured Soft Ceiling	White/Beige/Grayish Fibrous Heterogeneous	1% Cellulose	94% Non-fibrous (other)	5% Chrysotile
5 021402280-0005	Textured Soft Ceiling				Stop Positive (Not Analyzed)
6 021402280-0006	Textured Soft Ceiling				Stop Positive (Not Analyzed)
7 021402280-0007	Textured Soft Ceiling				Stop Positive (Not Analyzed)
8 021402280-0008	Textured Soft Ceiling				Stop Positive (Not Analyzed)

Analyst(s)
 Kristie Elliott (16)
 Scott Combs (42)


 Stephen Bennett, Laboratory Manager
 or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Report Amended: 05/01/2014 10:39:22 Replaces the Initial Report 05/01/2014 08:02:37. Reason Code: Data Entry-Change to Location

**EMSL Analytical, Inc.**

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EMSL Order: 021402280

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ProjectID:

Attn: **Darryl Washington**
University of South Carolina
743 Greene Street
Columbia, SC 29208

Phone: (803) 777-7000
 Fax: (803) 777-3990
 Received: 04/30/14 10:15 AM
 Analysis Date: 4/30/2014
 Collected:

Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
9 021402280-0009	Counter Caulking	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
10 021402280-0010	Counter Caulking	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
11 021402280-0011	Counter Caulking	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
12-Cove Base 021402280-0012	Olive Vinyl Base/ Glue	Gray/Olive Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
12-Mastic 021402280-0012A	Olive Vinyl Base/ Glue	Brown/Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
13-Cove Base 021402280-0013	Olive Vinyl Base/ Glue	Gray/Olive Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
13-Mastic 021402280-0013A	Olive Vinyl Base/ Glue	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
14-Cove Base 021402280-0014	Olive Vinyl Base/ Glue	Gray/Olive Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Kristie Elliott (16)
 Scott Combs (42)

Stephen Bennett, Laboratory Manager
 or other approved signatory

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Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
14-Mastic 021402280-0014A	Olive Vinyl Base/ Glue	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
15-Reducer Strip 021402280-0015	Black Reducer Strip	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
15-Mastic 021402280-0015A	Black Reducer Strip	Yellow Non-Fibrous Homogeneous	3% Synthetic <1% Cellulose	97% Non-fibrous (other)	None Detected
16-Reducer Strip 021402280-0016	Black Reducer Strip	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
16-Mastic 021402280-0016A	Black Reducer Strip	Yellow/Clear/Orange Non-Fibrous Homogeneous	1% Synthetic <1% Cellulose	99% Non-fibrous (other)	None Detected
17-Reducer Strip 021402280-0017	Black Reducer Strip	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
17-Mastic 021402280-0017A	Black Reducer Strip	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
18-Reducer Strip 021402280-0018	Brown Reducer Strip	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
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 Scott Combs (42)


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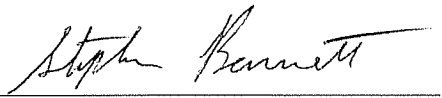
Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
18-Mastic 021402280-0018A	Brown Reducer Strip	Yellow/Clear Non-Fibrous Homogeneous	2% Synthetic <1% Cellulose	98% Non-fibrous (other)	None Detected
19-Reducer Strip 021402280-0019	Brown Reducer Strip	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
19-Mastic 021402280-0019A	Brown Reducer Strip	Yellow/Clear Non-Fibrous Homogeneous	2% Synthetic	98% Non-fibrous (other)	None Detected
20-Reducer Strip 021402280-0020	Brown Reducer Strip	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
20-Mastic 021402280-0020A	Brown Reducer Strip	Clear Fibrous Homogeneous	2% Synthetic	98% Non-fibrous (other)	None Detected
21 021402280-0021	Ceiling Tile	Gray/White Fibrous Heterogeneous	45% Cellulose 15% Min. Wool	10% Perlite 30% Non-fibrous (other)	None Detected
22 021402280-0022	Ceiling Tile	Gray/White Fibrous Heterogeneous	45% Cellulose 15% Min. Wool	10% Perlite 30% Non-fibrous (other)	None Detected
23 021402280-0023	Ceiling Tile	Tan/White Fibrous Homogeneous	45% Cellulose 15% Min. Wool	10% Perlite 30% Non-fibrous (other)	None Detected

Analyst(s)

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 Scott Combs (42)


 Stephen Bennett, Laboratory Manager
 or other approved signatory

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Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
24-Skim Coat 021402280-0024	Plaster	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
24-Rough Coat 021402280-0024A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected
25-Skim Coat 021402280-0025	Plaster	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
25-Rough Coat 021402280-0025A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected
26-Skim Coat 021402280-0026	Plaster	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
26-Rough Coat 021402280-0026A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected
27-Skim Coat 021402280-0027	Plaster	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
27-Rough Coat 021402280-0027A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected

Analyst(s)

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Scott Combs (42)


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Project: Coliseum 084

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
28-Skim Coat 021402280-0028	Plaster	Tan/White Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
28-Rough Coat 021402280-0028A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected
29-Skim Coat 021402280-0029	Plaster	White/Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
29-Rough Coat 021402280-0029A	Plaster	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected
30-Skim Coat 021402280-0030	Plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
30-Rough Coat 021402280-0030A	Plaster	Gray Non-Fibrous Homogeneous	<1% Cellulose	10% Quartz 90% Non-fibrous (other)	None Detected
31 021402280-0031	Caulking Putties	Beige/Grayish Non-Fibrous Heterogeneous	<1% Cellulose	97% Non-fibrous (other)	3% Anthophyllite
32 021402280-0032	Caulking Putties				Stop Positive (Not Analyzed)
33 021402280-0033	Caulking Putties				Stop Positive (Not Analyzed)

Analyst(s)

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Scott Combs (42)

Stephen Bennett, Laboratory Manager
or other approved signatory

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
34-Cove Base 021402280-0034	Grey Vinyl Base/ Glue	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
34-Mastic 021402280-0034A	Grey Vinyl Base/ Glue	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
35-Cove Base 021402280-0035	Grey Vinyl Base/ Glue	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
35-Mastic 021402280-0035A	Grey Vinyl Base/ Glue	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
36-Cove Base 021402280-0036	Grey Vinyl Base/ Glue	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
36-Mastic 021402280-0036A	Grey Vinyl Base/ Glue	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
37-Cove Base 021402280-0037	Black Vinyl Base/ Glue	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
37-Mastic 021402280-0037A	Black Vinyl Base/ Glue	Clear Non-Fibrous Homogeneous	1% Synthetic	99% Non-fibrous (other)	None Detected

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Scott Combs (42)

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
38-Cove Base 021402280-0038	Black Vinyl Base/ Glue	Gray/Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
38-Mastic 021402280-0038A	Black Vinyl Base/ Glue	Beige Non-Fibrous Homogeneous	<1% Synthetic <1% Cellulose	100% Non-fibrous (other)	None Detected
39-Cove Base 021402280-0039	Black Vinyl Base/ Glue	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
39-Mastic 021402280-0039A	Black Vinyl Base/ Glue	Brown/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
40 021402280-0040	Expansion Tar	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
41 021402280-0041	Expansion Tar	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
42 021402280-0042	Expansion Tar	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected

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Analysis Date: 5/1/2014
Collected:

Project: Coliseum 084

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
3 021402280-0003	Caulking/ Putties	Beige Non-Fibrous Homogeneous	100	None	No Asbestos Detected
11 021402280-0011	Counter Caulking	Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
14-Cove Base 021402280-0014	Olive Vinyl Base/ Glue	Olive Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
14-Mastic 021402280-0014A	Olive Vinyl Base/ Glue	Brown Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
17-Reducer Strip 021402280-0017	Black Reducer Strip	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
17-Mastic 021402280-0017A	Black Reducer Strip	Tan Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
20-Reducer Strip 021402280-0020	Brown Reducer Strip	Brown Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
20-Mastic 021402280-0020A	Brown Reducer Strip	Clear Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
36-Cove Base 021402280-0036	Grey Vinyl Base/ Glue	Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Stephen Bennett (13)

Stephen Bennett, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.
Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 05/01/2014 13:31:54



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**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
36-Mastic 021402280-0036A	Grey Vinyl Base/ Glue	Yellow Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
39-Cove Base 021402280-0039	Black Vinyl Base/ Glue	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
39-Mastic 021402280-0039A	Black Vinyl Base/ Glue	Brown /Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
42 021402280-0042	Expansion Tar	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)
Stephen Bennett (13)


Stephen Bennett, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.
Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 05/01/2014 13:31:54



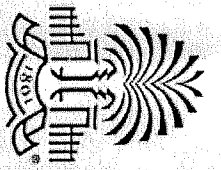
Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

2280

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: University of South Carolina		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 743 Greene Street		<i>Third Party Billing requires written authorization from third party</i>	
City: Columbia	State/Province: SC	Zip/Postal Code: 29208	Country: US
Report To (Name): USC Hazmat		Telephone #: 803-509-3376	
Email Address: asbestos@mailbox.sc.edu		Fax #:	Purchase Order:
Project Name/Number: Coliseum 084		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input checked="" type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
<small>*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.</small>			
PLM - Bulk (reporting limit)		TEM - Bulk	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1 (friable in NY) <input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY) <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> Standard Addition Method		<input checked="" type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 (TEM) <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique	
		Other	
		<input type="checkbox"/>	
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Date Sampled:	
Samplers Name:		Samplers Signature:	
Sample #	HA #	Sample Location	Material Description
Client Sample # (s):		Total # of Samples: 42	
Relinquished (Client):		Date:	Time:
Received (Lab): S Fletcher		Date: 4.30.14	Time: 10:15
Comments/Special Instructions: Fx 7959 30964252			



UNIVERSITY OF
SOUTH CAROLINA

2280

Sample Analysis

Building #: 84

Type of Analysis: Lead / Asbestos

Date: 04/29/14

Turnaround Time: 24 hr.

Area	Sample ID	Material Sampled	Material Location	F/NF	Cond	Quantity	TEM	Pot to Disturb
A	1	Caulking/Putties	AROUND TOILET SEAM RM 123	NF	Good	1Sq. Feet	<input type="checkbox"/>	Low
A	2	Caulking/Putties	AROUND TOILET SEAM RM 123	NF	Good	1Sq. Feet	<input type="checkbox"/>	Low
A	3	Caulking/Putties	AROUND TOILET SEAM RM 123	NF	Good	1Sq. Feet	<input checked="" type="checkbox"/>	Low
B	4	TEXTURED SOFT CEILING	CENTER MIDDLE SECTION HALL V102	F	Good	1499Sq. Feet	<input type="checkbox"/>	Low

B	5	TEXTURED SOFT CEILING	CENTER WEST CEILING V 102	F	Good	1499Sq. Feet	<input type="checkbox"/>	Low
B	6	TEXTURED SOFT CEILING	EAST CEILING V 102 HALL	F	Good	1499Sq. Feet	<input type="checkbox"/>	Low
B	7	TEXTURED SOFT CEILING	SOUTH WEST CEILING V 102 HALL	F	Good	1499Sq. Feet	<input type="checkbox"/>	Low
B	8	TEXTURED SOFT CEILING	EAST CORNER CEILING V 102 HALL	F	Good	1499Sq. Feet	<input type="checkbox"/>	Low
C	9	COUNTER CAULKING	ROOM 136 LEFT COUNTER	NF	Good	40Linear Feet	<input type="checkbox"/>	Low
C	10	COUNTER CAULKING	RM 136 RIGHT COUNTER	NF	Good	40Linear Feet	<input type="checkbox"/>	Low
C	11	COUNTER CAULKING	RIGHT COUNTER RM 136	NF	Good	40Linear Feet	<input checked="" type="checkbox"/>	Low
D	12	OLIVE VINYL BASE / GLUE	HALLWAY OUTSIDE M 405	NF	Good	4Linear Feet	<input type="checkbox"/>	Low

2280

D	13	OLIVE VINYL BASE / GLUE	HALLWAY OUTSIDE M 405	NF	Good	4linear Feet	<input type="checkbox"/>	Low
D	14	OLIVE VINYL BASE / GLUE	HALLWAY OUTSIDE M 405	NF	Good	4linear Feet	<input checked="" type="checkbox"/>	Low
E	15	BLACK REDUCER STRIP	AT DOOR TO RM 133	NF	Good	24Linear Feet	<input type="checkbox"/>	Low
E	16	BLACK REDUCER STRIP	AT DOOR TO RM 135	NF	Good	24Linear Feet	<input type="checkbox"/>	Low
E	17	BLACK REDUCER STRIP	AT DOOR TO RM 415	NF	Good	24Linear Feet	<input checked="" type="checkbox"/>	Low
F	18	BROWN REDUCER STRIPS	AT DOOR TO RM 423	NF	Good	4linear Feet	<input type="checkbox"/>	Low
F	19	BROWN REDUCER STRIPS	AT DOOR TO RM 423	NF	Good	4linear Feet	<input type="checkbox"/>	Low
F	20	BROWN REDUCER STRIPS	AT DOOR TO RM 423	NF	Good	4linear Feet	<input checked="" type="checkbox"/>	Low
G	21	2X2 CEILING TILE	MIDDLE SECTION OF V102	F	Good	1999Sq. Feet	<input type="checkbox"/>	Low

1280

G	22	2X2 CEILING TILE	EAST END HALL V102	F	Good	1999Sq. Feet	<input type="checkbox"/>	Low
G	23	2X2 CEILING TILE	WEST END V 102 HALL	F	Good	1999Sq. Feet	<input type="checkbox"/>	Low
H	24	PLASTER	DRESSING RM 123 CEILING	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
H	25	PLASTER	RM 136 CEILING MATERIAL	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
H	26	PLASTER	ROOM 136 CEILING	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
H	27	PLASTER	RM 136 CEILING MATERIAL	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
H	28	PLASTER	ROOM 427 CEILING MATERIAL	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
H	29	PLASTER	WOMENS REST ROOM 137 CEILING	F	Good	240Sq. Feet	<input type="checkbox"/>	Low

228

H	30	PLASTER	MENS RM 427	F	Good	240Sq. Feet	<input type="checkbox"/>	Low
I	31	Caulking/Putties	AROUND DRINKING FOUNTAIN V 102 HALL	NF	Good	1Sq. Feet	<input type="checkbox"/>	Low
I	32	Caulking/Putties	AROUND DRINKING FOUNTAIN V 102 HALL	NF	Good	1Sq. Feet	<input type="checkbox"/>	Low
I	33	Caulking/Putties	AROUND DRINKING FOUNTAIN V 102 HALL	NF	Good	1Sq. Feet	<input checked="" type="checkbox"/>	Low
J	34	GREY VINYL BASE / GLUE	HALLWAY OUTSIDE RM 421	NF	Good	50Linear Feet	<input type="checkbox"/>	Low
J	35	GREY VINYL BASE / GLUE	HALLWAY OUTSIDE RM 421	NF	Good	50Linear Feet	<input type="checkbox"/>	Low
J	36	GREY VINYL BASE / GLUE	HALLWAY OUTSIDE RM 421	NF	Good	50Linear Feet	<input checked="" type="checkbox"/>	Low

Handwritten signature

K	37	BLACK VINYL BASE / GLUE	ON WALL OUTSIDE RM 133	NF	Good	500Linear Feet	<input type="checkbox"/>	Low
K	38	BLACK VINYL BASE / GLUE	OUTSIDE WOMENS ROOM ON WALL	NF	Good	500Linear Feet	<input type="checkbox"/>	Low
K	39	BLACK VINYL BASE / GLUE	ON WALLS BY MENS ROOM V102	NF	Good	500Linear Feet	<input checked="" type="checkbox"/>	Low
L	40	EXPANSION TAR	MATERIAL COMING OUT OF SLAB BY WOMENS DRESSING RM	NF	Good	4999Linear Feet	<input type="checkbox"/>	Medium
L	41	EXPANSION TAR	MATERIAL COMING OUT OF SLAB BY WOMENS DRESSING RM	NF	Good	4999Linear Feet	<input type="checkbox"/>	Medium
L	42	EXPANSION TAR	MATERIAL COMING OUT OF SLAB BY WOMENS DRESSING RM	NF	Good	4999Linear Feet	<input checked="" type="checkbox"/>	Medium

2280

License #: BI-005668

FM#: _____

EM00453161

Signature: _____



Requester: Darryl

Washington

Send lab results in PDF and CSV formats as soon as possible to asbestos@mailbox.sc.edu.

APPENDIX B

Asbestos Containing Materials Data, Carolina Coliseum

Performed by F&ME Consultants, Dated: May 14, 2014

Performed by F&ME Consultants, Dated: May 21, 2014

**EMSL Analytical, Inc.**

706 Gralin Street, Kernersville, NC 27284

Phone/Fax: (336) 992-1025 / (336) 992-4175

<http://www.EMSL.com>greensborolab@emsl.com

EMSL Order:	021402550
CustomerID:	FMEC62
CustomerPO:	E5300.23
ProjectID:	

Attn: **Glynn Ellen**
F & ME Consultants
3112 Divine Street

Phone: (803) 254-4540
 Fax: (803) 254-4542
 Received: 05/14/14 10:20 AM
 Analysis Date: 5/14/2014
 Collected:


Columbia, SC 29205Project: **E5300.23 Carolina Coliseum Abatement Design**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos			Asbestos
			% Fibrous	% Non-Fibrous	% Type	
1 <i>021402550-0001</i>	Plaster Brown Coat	Gray Non-Fibrous Heterogeneous	<1% Cellulose <1% Synthetic	15% Quartz 85% Non-fibrous (other)	None Detected	
2 <i>021402550-0002</i>	Plaster Brown Coat	Gray Non-Fibrous Heterogeneous	<1% Cellulose <1% Synthetic	15% Quartz 85% Non-fibrous (other)	None Detected	
3 <i>021402550-0003</i>	Plaster Brown Coat	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (other)	None Detected	
4 <i>021402550-0004</i>	Plaster Brown Coat	Gray/Tan Non-Fibrous Heterogeneous	<1% Cellulose <1% Synthetic	15% Quartz 83% Non-fibrous (other)	2% Chrysotile	
5 <i>021402550-0005</i>	Plaster Brown Coat				Stop Positive (Not Analyzed)	
6 <i>021402550-0006</i>	Plaster Brown Coat				Stop Positive (Not Analyzed)	

Analyst(s)

 Kristie Elliott (1)
 Scott Combs (3)


 Stephen Bennett, Laboratory Manager
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%
 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from 05/14/2014 14:23:59

Chain of Custody

EMSL Analytical, Inc.
706 Gralin Street
Kernersville, NC 27284

Asbestos Lab Services

Phone: (336) 992-1025
Fax: (336) 992-4175
<http://www.emsl.com>

Please print all information legibly.

021402550

Company:	F&ME Consultants	Bill To:	F&ME Consultants
Address 1:	3112 Devine Street	Address 1:	P.O. Box 5855
Address 2:		Address 2:	
City, State:	Columbia, South Carolina	City, State:	Columbia, South Carolina
Zip/Post Code:	29205	Zip/Post Code:	29250
Country:	USA	Country:	USA
Contact Name:	Glynn Ellen	Attn:	Jim Kelleher
Phone:	803 254-4540	Phone:	803 777-1208
Fax:	803 254-4542	Fax:	803 777-1028
Email:	glynn@fmecol.com jshannon@fmecol.com	Email:	jkelleher@fmecol.com
EMSL Rep:	Jason McDonald	P.O. Number:	E5300.23
Project Name/Number:	E5300.23 Carolina Coliseum Abatement Design		

MATRIX			TURNAROUND			
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Micro-Vac	<input type="checkbox"/> 3 Hours	<input type="checkbox"/> 6 Hours	<input type="checkbox"/> Same Day or 12 Hours*	<input checked="" type="checkbox"/> 24 Hours (1day)
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Drinking Water		<input type="checkbox"/> 48 Hours (2 days)	<input type="checkbox"/> 72 Hours (3 days)	<input type="checkbox"/> 96 Hours (4 days)	<input type="checkbox"/> 120 Hours (5 days)
<input type="checkbox"/> Wipe	<input type="checkbox"/> Wastewater		<input type="checkbox"/> 144+ hours (6-10 days)			

TEM AIR, 3 hours, 6 hours, Please call ahead to schedule. There is a premium charge for 3-hour tat, please call 1-800-220-3675 for price prior to sending samples. You will be asked to sign an authorization form for this service.

*12 hours (must arrive by 11:00a.m. Mon -Fri.), Please Refer to Price Quote

<u>PCM - Air</u>	<u>TEM Air</u>	<u>TEM WATER</u>
<input type="checkbox"/> NIOSH 7400(A) Issue 2: August 1994	<input type="checkbox"/> AHERA 40 CFR, Part 763 Subpart E	<input type="checkbox"/> EPA 100.1
<input type="checkbox"/> OSHA w/TWA	<input type="checkbox"/> NIOSH 7402	<input type="checkbox"/> EPA 100.2
<input type="checkbox"/> Other:	<input type="checkbox"/> EPA Level II	<input type="checkbox"/> NYS 198.2
<u>PLM - Bulk</u>	<u>TEM BULK</u>	<u>TEM Microvac/Wipe</u>
<input checked="" type="checkbox"/> EPA 600/R-93/116	<input type="checkbox"/> Drop Mount (Qualitative)	<input type="checkbox"/> ASTM D 5755-95 (quantative method)
<input type="checkbox"/> EPA Point Count	<input type="checkbox"/> Chatfield SOP - 1988-02	<input type="checkbox"/> Wipe Qualitative
<input type="checkbox"/> NY Stratified Point Count	<input type="checkbox"/> TEM NOB (Gravimetric) NYS 198.4	
<input type="checkbox"/> PLM NOB (Gravimetric) NYS 198.1	<input type="checkbox"/> EMSL Standard Addition:	<u>XRD</u>
<input type="checkbox"/> NIOSH 9002:		<input type="checkbox"/> Asbestos
<input type="checkbox"/> EMSL Standard Addition:	<u>PLM Soil</u>	<input type="checkbox"/> Silica NIOSH 7500
<u>SEM Air or Bulk</u>	<input type="checkbox"/> EPA Protocol Qualitative	
<input type="checkbox"/> Qualitative	<input type="checkbox"/> EPA Protocol Quantitative	<u>OTHER</u>
<input type="checkbox"/> Quantitative	<input type="checkbox"/> EMSL MSD 9000 Method fibers/gram	<input type="checkbox"/>

Fx 8046 4850 5232



2550

Chain of Custody

EMSL Analytical, Inc.
706 Gralin Street
Kernersville, NC 27284

Asbestos Lab Services

Phone: (336) 992-1025
Fax: (336) 992-4175
<http://www.emsl.com>

Please print all information legibly.

Client Sample # 1 to 6

Total Samples #: 6

Relinquished: Mike Mincey *Mike Mincey* Date: 05/13/2014

Time: 17:00

Received: *SF* Date: *5/14/14*

Time: *10:20*

Relinquished: _____ Date: _____

Time: _____

Received: _____ Date: _____

Time: _____

NOTE: FIRST POSITIVE STOP PROTOCOL. ALSO, FOR SAMPLES DENOTED WITH AN ASTERICK (*), IF THE FIRST TWO SAMPLES AS PLM AND IF THE RESULTS ARE NEGATIVE, RUN LAST SAMPLE AS TEM BULK FOR NEGATIVE CONFIRMATION. SOUTH CAROLINA GUIDELINES.

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME (if applicable)
1	1	Plaster Brown Coat from Above Ceiling
2	2	Plaster Brown Coat from Above Ceiling
3	3	Plaster Brown Coat from Above Ceiling
4	4	Plaster Brown Coat on Ceiling Underside
5	5	Plaster Brown Coat on Ceiling Underside
6	6	Plaster Brown Coat on Ceiling Underside
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

**EMSL Analytical, Inc.**

706 Gralin Street, Kernersville, NC 27284

Phone/Fax: (336) 992-1025 / (336) 992-4175

<http://www.EMSL.com>greensborolab@emsl.com

EMSL Order:	021402671
CustomerID:	FMEC62
CustomerPO:	E5300.23
ProjectID:	

Attn: **Glynn Ellen**
F & ME Consultants
3112 Divine Street

Phone: (803) 254-4540
 Fax: (803) 254-4542
 Received: 05/20/14 9:50 AM
 Analysis Date: 5/21/2014
 Collected:


Columbia, SC 29205Project: **E5300.23 Carolina Coliseum Abatement Design**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
7 021402671-0001	Pipe Wrap On Fiberglass Pipe Insulation	Black/Silver/Beige	20%	Cellulose	70% Non-fibrous (other) None Detected
		Fibrous Heterogeneous	10%	Glass	
8 021402671-0002	Pipe Wrap On Fiberglass Pipe Insulation	Black/Silver/Orange	30%	Cellulose	60% Non-fibrous (other) None Detected
		Fibrous Heterogeneous	10%	Glass	
10-Skim Coat 021402671-0003	Plaster	White Non-Fibrous Homogeneous			20% Ca Carbonate 80% Non-fibrous (other) None Detected
10-Rough Coat 021402671-0003A	Plaster	Gray Non-Fibrous Homogeneous	<1%	Cellulose	5% Quartz 95% Non-fibrous (other) None Detected

Analyst(s)

 Nicole Shutts (3)
 Scott Combs (1)


 Stephen Bennett, Laboratory Manager
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%
 Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from 05/21/2014 08:29:44



EMSL Analytical, Inc.

706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
<http://www.EMSL.com> greensborolab@emsl.com

EMSL Order: 021402671
CustomerID: FMEC62
CustomerPO: E5300.23
ProjectID:

Attn: **Glynn Ellen**
F & ME Consultants
3112 Divine Street

Columbia, SC 29205


Phone: (803) 254-4540
Fax: (803) 254-4542
Received: 05/20/14 9:50 AM
Analysis Date: 5/22/2014
Collected:

Project: **E5300.23 Carolina Coliseum Abatement Design**

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM
via EPA/600/R-93/116 Section 2.5.5.1**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
9 021402671-0004	Pipe Wrap On Fiberglass Insulation	Gray /Black /Silver /Orange Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
Scott Combs (1)


Stephen Bennett, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.
Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from 05/22/2014 09:41:53

Chain of Custody

EMSL Analytical, Inc.
706 Gralin Street
Kernersville, NC 27284

Asbestos Lab Services

Phone: (336) 992-1025
Fax: (336) 992-4175
<http://www.emsl.com>

Please print all information legibly.

021402671

Company:	F&ME Consultants	Bill To:	F&ME Consultants
Address 1:	3112 Devine Street	Address 1:	P.O. Box 5855
Address 2:		Address 2:	
City, State:	Columbia, South Carolina	City, State:	Columbia, South Carolina
Zip/Post Code:	29205	Zip/Post Code:	29250
Country:	USA	Country:	USA
Contact Name:	Glynn Ellen	Attn:	Jim Kelleher
Phone:	803 254-4540	Phone:	803 777-1208
Fax:	803 254-4542	Fax:	803 777-1028
Email:	glynn@fmecon.com jshannon@fmecon.com	Email:	jkelleher@fmecon.com
EMSL Rep:	Jason McDonald	P.O. Number:	E5300.23
Project Name/Number:	E5300.23 Carolina Coliseum Abatement Design		

MATRIX			TURNAROUND			
<input type="checkbox"/> Air	<input type="checkbox"/> Soil	<input type="checkbox"/> Micro-Vac	<input type="checkbox"/> 3 Hours	<input type="checkbox"/> 6 Hours	<input type="checkbox"/> Same Day or 12 Hours*	<input checked="" type="checkbox"/> 24 Hours (1day)
<input checked="" type="checkbox"/> Bulk	<input type="checkbox"/> Drinking Water		<input checked="" type="checkbox"/> 48 Hours (2 days)	<input type="checkbox"/> 72 Hours (3 days)	<input type="checkbox"/> 96 Hours (4 days)	<input type="checkbox"/> 120 Hours (5 days)
<input type="checkbox"/> Wipe	<input type="checkbox"/> Wastewater		<input type="checkbox"/> 144+ hours (6-10 days)			

TEM AIR, 3 hours, 6 hours, Please call ahead to schedule. There is a premium charge for 3-hour tat, please call 1-800-220-3675 for price prior to sending samples. You will be asked to sign an authorization form for this service.

*12 hours (must arrive by 11:00a.m. Mon -Fri.), Please Refer to Price Quote

<u>PCM - Air</u>	<u>TEM Air</u>	<u>TEM WATER</u>
<input type="checkbox"/> NIOSH 7400(A) Issue 2: August 1994	<input type="checkbox"/> AHERA 40 CFR, Part 763 Subpart E	<input type="checkbox"/> EPA 100.1
<input type="checkbox"/> OSHA w/TWA	<input type="checkbox"/> NIOSH 7402	<input type="checkbox"/> EPA 100.2
<input type="checkbox"/> Other:	<input type="checkbox"/> EPA Level II	<input type="checkbox"/> NYS 198.2
<u>PLM - Bulk</u>	<u>TEM BULK</u>	<u>TEM Microvac/Wipe</u>
<input checked="" type="checkbox"/> EPA 600/R-93/116	<input type="checkbox"/> Drop Mount (Qualitative)	<input type="checkbox"/> ASTM D 5755-95 (quantative method)
<input type="checkbox"/> EPA Point Count	<input type="checkbox"/> Chatfield SOP - 1988-02	<input type="checkbox"/> Wipe Qualitative
<input type="checkbox"/> NY Stratified Point Count	<input checked="" type="checkbox"/> TEM NOB (Gravimetric) NYS 198.4	
<input type="checkbox"/> PLM NOB (Gravimetric) NYS 198.1	<input type="checkbox"/> EMSL Standard Addition:	<u>XRD</u>
<input type="checkbox"/> NIOSH 9002:		<input type="checkbox"/> Asbestos
<input type="checkbox"/> EMSL Standard Addition:	<u>PLM Soil</u>	<input type="checkbox"/> Silica NIOSH 7500
<u>SEM Air or Bulk</u>	<input type="checkbox"/> EPA Protocol Qualitative	
<input type="checkbox"/> Qualitative	<input type="checkbox"/> EPA Protocol Quantitative	<u>OTHER</u>
<input type="checkbox"/> Quantitative	<input type="checkbox"/> EMSL MSD 9000 Method fibers/gram	<input type="checkbox"/>

Fx 8046 4850 5200

2671

Chain of Custody

EMSL Analytical, Inc.
706 Gralin Street
Kernersville, NC 27284

Asbestos Lab Services

Phone: (336) 992-1025
Fax: (336) 992-4175
<http://www.emsl.com>

Please print all information legibly.

Client Sample # 7 to 10

Total Samples #: 4

Relinquished: Mike Mincey *Mike Mincey* Date: 05/16/2014

Time: 17:00

Received: SF Date: 5/20/14

Time: 9:50

Relinquished: _____ Date: _____

Time: _____

Received: _____ Date: _____

Time: _____

NOTE: FIRST POSITIVE STOP PROTOCOL. ALSO, FOR SAMPLES DENOTED WITH AN ASTERICK (*), IF THE FIRST TWO SAMPLES AS PLM AND IF THE RESULTS ARE NEGATIVE, RUN LAST SAMPLE AS TEM BULK FOR NEGATIVE CONFIRMATION. SOUTH CAROLINA GUIDELINES.

SAMPLE NUMBER	SAMPLE DESCRIPTION/LOCATION	VOLUME (if applicable)
1	7	Pipe Wrap on Fiberglass Pipe Insulation
2	8	Pipe Wrap on Fiberglass Pipe Insulation
3	*9	Pipe Wrap on Fiberglass Pipe Insulation
4	10	Plaster (Both Coats if possible)
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APPENDIX C

USC Lead Management Program



U N I V E R S I T Y O F
SOUTH CAROLINA

**University of South Carolina
Facility Services
Lead Management Program**

**Requirements for
Managing Projects That Involve
Lead-Containing Materials**

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1.0 INTRODUCTION

This document is the official Facility Services position on procedures and operations involving the disturbance of lead-containing materials by employees or outside contractors.

This document was developed from a template developed by USC Environmental Health and Safety to ensure University compliance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) and the office of Housing and Urban Development (HUD) Standards.

The entity that is responsible for management of work affected by this program is also responsible for following the requirements herein.

2.0 PURPOSE

The purpose of this Lead Management Program is to prevent lead exposure of all employees, regardless of job title, as well as students, and to help prevent the potential for building contamination from lead during demolition, maintenance, and renovation activities in University of South Carolina owned structures.

The requirements in this Program set standards for work that disturbs lead-containing materials. Contractors engaged in such projects are expected to possess the managerial expertise, experience and to employ workers with skill, training, and experience so that the work is carried out in compliance with these requirements.

3.0 DEFINITIONS

Action Level (AL) – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30ug/m³) calculated as an 8-hour time-weighted average.

Child Occupied Facility – a building or portion of a building constructed before 1978 that is visited regularly by a child who is 6 years of age or less, on at least 2 different days within a given week, if each day's visit is at least 3 hours and the combined weekly visit is at least 6 hours in length, and the combined annual visits are at least 60 hours in length. Child occupied facility includes but is not limited to a day-care center, a preschool, and a kindergarten classroom.

Contractor Employer Program - In accordance with the Hazard Communication Standard, each outside contractor working on a USC owned property (on-site) is responsible for developing, implementing, and informing other on-site employers of all hazard communication related information. Under the Program, each outside employer must provide USC, and other employer(s) working on-site, with unrestricted, on-site access to material safety data sheets (MSDSs) for all hazardous materials used, handled or stored on-site to which an employee may potentially be exposed to during their normal course of work.

Hazardous Waste – Generation and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). If a waste exhibits toxicity, corrosivity, ignitability, or reactivity characteristics it is considered hazardous.

HEPA – A HEPA filter is one that is capable of filtering 99.97% of all airborne particles at 0.3 micrometers (μm) in diameter.

HEPA Vacuum Cleaner - An electrical device that cleans surfaces by suction and discharges exhaust air through a HEPA filter.

Lead-Containing Material – Any paint, material or coating containing any detectable quantity of lead.

Lead-Based Material – Any paint, material or coating containing $>0.06\%$ by weight (600 ppm) total lead OR containing $\geq 0.7 \text{ mg/cm}^2$ as measured with an XRF (X-ray diffraction) analyzer.

Permissible Exposure Limit (PEL) - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 50 micrograms per cubic meter of air ($50\mu\text{g/m}^3$) calculated as an 8-hour time-weighted average.

Presumed Lead Containing Material (PLCM) – Any material that is presumed to contain any quantity of lead.

Representative Sample – Sample that accurately captures a particular material or area based on the typical characteristic of that material or area.

Substrate – The underlying material a building component is made from, over which is often applied a surface finish such as paint. Common substrates include, plaster, concrete, wood, metal, and gypsum.

Target Housing – Any housing constructed before 1978, except any of the following:

- (a) Housing for the elderly or persons with disabilities, unless any 1 or more children age 6 years or less resides or is expected to reside in that housing.
- (b) A 0-bedroom dwelling.
- (c) An unoccupied dwelling unit pending demolition, provided the dwelling unit remains unoccupied until demolition.

Toxicity Characteristic Leachate Procedure (TCLP) - Test conducted to determine if a substance is a hazardous waste. The hazardous waste limit for lead is 5 parts per million (ppm).

4.0 DUTIES AND RESPONSIBILITIES

The Office of Environmental Health and Safety (EHS) shall:

- 1) Provide technical guidance to University personnel concerning lead hazard evaluation and control.

- 2) Review results of area air monitoring and clearance dust wipe sampling and provide interpretation for departments managing work.
- 3) Direct the University Departments conducting the work to modify or stop lead related work practices if employees, students, or the public are being exposed to lead hazards.
- 4) Maintain records of all sampling data submitted to EHS.
- 5) Communicate requirements of Lead Management Program.
- 6) Periodically review the Lead Management Program and revise as necessary.
- 7) Provide Lead Training in accordance with 29 CFR 1926.62 (L)(2) for University employees anticipated to have occupational lead exposure.

Facility Services shall:

- 1) Disclose known information regarding the presence of lead in building and construction materials to any contractor retained to conduct demolition or renovation work at Facility Services
- 2) Contact EHS a minimum of 5 working days in advance of upcoming projects that may impact coated surfaces that may contain lead.
- 3) Ensure that the Contractor has read, understands, and will abide by the minimum performance standards required in this Program for controlling lead hazards.
- 4) Report any problems associated with implementation of the Lead Management Program to EHS.
- 5) Stop or modify lead related work practices if employees, students, or the public are being exposed to lead hazards.
- 6) Conduct area air monitoring and clearance sampling by qualified consultant as required by this program and provide EHS with all sample results.
- 7) Ensure all lead related work-sites and all areas that have been contaminated resulting from the work conducted are properly cleaned and meet the clearance criteria required by this Program.
- 8) Ensure all hazardous waste is properly identified, labeled, segregated and stored at the job-site until removed by approved hazardous waste contractor.
- 9) Provide specific contractor language regarding projects that may contain lead to outside contractors bidding on projects.

5.0 LEAD IDENTIFICATION

Because of its physical properties, lead has been widely used as an additive to many building materials. Although lead has been banned from use on potable water supplies and residential paint, it may still be present in older buildings. Some lead containing building materials continue to be used to this day. The following materials should be presumed to contain lead unless manufacturer information, MSDS, or testing proves otherwise.

Presumed Lead Containing Materials (PLCM):

- Interior and exterior paint
- Steel and iron primer
- Industrial paint
- Industrial electrical jacketing
- Roof flashing
- Tank linings
- Soft solder
- Glazed Ceramics
- Sheeting, blocks, and bricks in floors and walls for x-ray penetration protection

The OSHA Lead Standard applies to any detectable concentration of lead in a material. The presence of any lead in a material triggers the worker protection and work practice requirements of this program.

Facility Services may decide to conduct lead identification sampling to determine if a presumed lead containing material contains lead and requires lead management.

Sampling may only be conducted by a qualified USC employee or a qualified consulting firm. USC Facility Services has qualified personnel that are available conduct sampling for the identification of lead.

6.0 LEAD EXPOSURE

According to the Occupational Safety and Health Association (OSHA), any lead containing material has the potential to create an airborne exposure to lead. Contractors that disturb lead-containing material or presumed lead containing material must protect their employees from airborne lead exposure in compliance with the OSHA Lead Standard 29 CFR 1926.62. In accordance with OSHA, Contractors must protect their own employees with personal protective equipment, training, and medical surveillance.

Contractors conducting lead work on multi-contractor sites must also inform all site workers of potential exposure to lead.

USC employees must also be protected, regardless of job title, from lead exposures according to the OSHA General Industry Standard 29 CFR 1910.1025. Protecting these individuals from lead exposure will be accomplished by making sure the Contractor contains all airborne lead to the work site by using appropriate work practice controls and meeting the minimum performance criteria listed below.

7.0 WORK CATEGORIES

Projects involving lead are categorized according to the tasks performed, depending on the risk level. In order to ensure the appropriate measure will be taken to protect all individuals at USC, all projects will be categorized by Facility Services prior to initiation. Use the following tasks described below to categorize the work being conducted. Recommended minimum work practice controls can be found in Section 14.0.

Level 0

Level 0 tasks have been documented through personal air monitoring not to result in exposures above the OSHA Action Limit, and do not generate dust/debris or other waste requiring special waste management practices.

- Tasks conducted with lead-containing or lead-based materials that are not anticipated to create dust or debris and are not listed as Level 1, 2 or 3 Tasks. (example: use of manual (i.e. hammer, screwdriver) or power (i.e. pneumatic nail gun/electric drill) tools to insert nails or screws into surfaces through intact paint or coating which remains intact during work)
- Power drilling holes into materials or coatings $\leq 0.06\%$ by weight, or $< 0.7 \text{ mg/cm}^2$ as measured with XRF)
- Manual demolition of materials or coatings containing $\leq 0.06\%$ by weight, or $< 0.7 \text{ mg/cm}^2$ as measured with XRF)
- Manual scraping or sanding of materials or coatings containing $\leq 0.06\%$ by weight, or $< 0.7 \text{ mg/cm}^2$ as measured with XRF) using wet methods
- Chemical stripping of materials or coatings containing $\leq 0.06\%$ by weight, or $< 0.7 \text{ mg/cm}^2$ as measured with XRF)

Level 1

Level 1 tasks have been documented via personal air monitoring to result in exposures consistently below the OSHA Action Limit, but require more extensive work practices to minimize dust generation, contain lead contamination, and properly manage waste material resulting from work.

Example tasks may include, but are not limited to:

- Manual demolition of lead-based materials or coatings (contains $> 0.06\%$ by weight, or $\geq 0.7 \text{ mg/cm}^2$ as measured with XRF)
- Manual scraping or sanding of lead-based materials or coatings (contains $> 0.06\%$ by weight, or $\geq 0.7 \text{ mg/cm}^2$ as measured with XRF) using wet methods
- Power tool disturbance of lead based materials or coatings (contains $\geq 0.06\%$ by weight, or $> 0.7 \text{ mg/cm}^2$ as measured with XRF) with a dust collection system
- Power tool disturbance of materials or coatings containing $< 0.06\%$ by weight, or $\leq 0.7 \text{ mg/cm}^2$ as measured with XRF) with a dust collection system
- Chemical stripping of lead-based materials or coatings (contains $> 0.06\%$ by weight, or $\geq 0.7 \text{ mg/cm}^2$ as measured with XRF)

Level 2

Level 2 tasks either have been documented via personal air monitoring to result in exposures above the OSHA Action Limit, or may result in an unknown exposure due to lack of personal air monitoring data. Example tasks may include, but are not limited to:

- Using lead-containing mortar
- Lead burning
- Rivet busting on lead containing materials or coatings
- Power tool disturbance of lead containing materials or coatings without a dust collection system
- Clean-up of dry expendable abrasives used to remove a lead containing coating
- Spray painting with lead-based paint
- Use of a heat gun on lead containing materials or coatings

Level 3

Level 3 tasks are anticipated to generate high levels of airborne dust and pose a high risk of exposure above the OSHA PEL. Example tasks may include, but are not limited to:

- Abrasive blasting on lead containing materials or coatings
- Welding on lead containing materials or coatings
- Cutting on lead containing materials or coatings
- Torch burning on lead containing materials or coatings

8.0 PROJECT NOTIFICATION

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing material by an outside contractor, Facility Services must provide EHS with an Initial Lead Project Notification. The initial notification must contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants.

Facility Services must complete and submit the form 15 days prior to the start of the project. This form can be found in Appendix 1.

9.0 NOTIFICATION TO BUILDING OCCUPANTS

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing material, Facility Services will forward an informational memo to all appropriate persons on the building contact directory list located in the building that lead work is conducted. This memo will contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants.

10.0 TRAINING

All maintenance and custodial staff must attend Lead Awareness training annually. This training requirement is satisfied through the comprehensive safety training program conducted by EHS.

All USC employees conduct, or that are anticipated to enter a lead work site other than Level 0 must receive Occupational Exposure to Lead Training in accordance with 29 CFR 1926.62(L)(2). Lead training shall be conducted annually by EHS and will consist of the following:

- The specific nature of the operations which could result in exposure to lead above the action level
- Procedures and work practices required to minimize lead exposure and properly manage resulting waste material
- The purpose, proper selection, fitting, use and limitations of respirators
- The purpose and description of the medical surveillance and medical removal programs, including health effects of lead exposure and potential reproductive consequences
- The contents of this compliance plan.
- Instruction that chelating agents should not be used unless under the direction of a licensed physician.
- Explanation of engineering controls and work practices for lead-related work
- The employee's right of access to records

11.0 PERFORMANCE CRITERIA FOR CONTRACTORS

Minimum Performance Criteria have been established for outside contractors conducting lead related work to ensure that no University employee or student is exposed above the OSHA Action Level of 30 ug/m³ of airborne lead or has the potential to come into contact with lead dust as a result of contractor's activities. At a minimum, a Contractor disturbing lead related materials must meet the following requirements.

- Possess, at a minimum, 2 years of experience with lead related work.
- Limit access to worksites in which Level 1, 2 and 3 tasks are taking place to trained and authorized personnel only.
- Adequately limit all migration of lead containing dust and debris to any areas outside the worksite.
- Ensure that USC employees and students not associated with the worksite are not exposed to lead levels above the OSHA Action Level.
- Prevent the contamination of USC property (i.e., computers, chairs, desks, carpet, floors, walls, etc.) from lead dust and debris.
- Collect and manage hazardous wastes produced in accordance with RCRA hazardous waste requirements.
- Ensure that workers contaminated with lead containing dust and debris do not transfer that material outside the worksite

Facility Services will ensure airborne lead and dust is contained to the worksite by conducting or contracting for approved third party Area Air Monitoring and Clearance Dust

Wipe Sampling (information on Area Air Monitoring and Clearance Dust Wipe Sampling can be found in Sections 15 and 16) when required by this program.

Note: USC employees designated to conduct lead related work will be protected in accordance with the OSHA Lead in Construction Standard 29 CFR 1926.62.

12.0 LEAD COMPLIANCE PLAN

OSHA requires contractors that employ workers occupationally exposed to lead establish and implement a Lead Compliance Plan. The Lead Compliance Plan shall be prepared by the Contractor, as required by the OSHA Standard (29 CFR 1926.62) and submitted to Facility Services and EHS. When Facility Services conducts any Level 1 tasks or above, a Lead Compliance Plan will also be developed. The document must include the following:

- Description of each activity in which lead containing, or presumed lead containing material is disturbed (i.e., equipment used, material involved and % Pb, controls in place, operating procedures, crew size and corresponding employee job responsibilities).
- Work Practice Controls to be used to prevent lead contamination from occurring outside the work-site.
- Regular inspections of the work-site and equipment by a competent person named by the Contractor.
- A description of arrangements made among Contractors on multi-contractor sites to inform workers of potential exposure to lead and their responsibility to comply with the OSHA Lead in Construction Standard 29 CFR 1926.62.
- Proof of appropriate Lead Training for each employee on-site.
- Proof of appropriate written respirator program and compliance under 29 CFR 1910.134.
- Certification that the Contractor has read understands and will abide by the minimum performance standards required in this Program for controlling lead hazards.

13.0 SIGNAGE

The Contractor conducting lead work shall post warning signs outside any entrance to the worksite in accordance with the OSHA standard below:

1926.62(m)(2)(i) The employer shall post the following warning signs in each work area where employee exposure to lead is above the PEL.

**WARNING:
LEAD WORK AREA
POISON
NO SMOKING OR EATING**

1926.62(m)(2)(ii) The employer shall assure that signs required by this paragraph are illuminated and cleaned as necessary so that the legend is readily visible.

Additionally all work areas (other than Category 0), regardless of airborne lead concentrations, shall be posted with the following sign. An example of this sign can be found in Appendix 2.

WARNING
LEAD WORK AREA
NO EMPLOYEE PERMITTED ENTRANCE
WITHOUT PROOF OF LEAD TRAINING
for further information, please contact:
(Project Manger) at (Phone #)

Facility Services will ensure that signs are posted and maintained appropriately.

14.0 RECOMMENDED MINIMUM WORK PRACTICE CONTROLS

Recommended work practices have been developed for lead related work conducted at USC. Work involving lead-containing material must be well planned out to avoid worker and occupant exposure. The following work practices are recommended for meeting the performance criteria listed in the Requirements of Contractors Section of this Program.

Level 0 Tasks

Training - Employees engaged in Level 0 tasks must have received Lead Awareness training within the past year.

PPE - No PPE Required

Required Work Practices

- Establish “safe zone” around work using barrier tape. Do not allow public access to work area.
- Use care to minimize the production of dust and debris.
- Visually inspect area for any debris/dust resulting from work conducted.

Level 1 Tasks

Training - Employees engaged in Level 1 tasks must have received Occupational Exposure to Lead training within the past year.

PPE – Tyvek suit or coveralls to prevent contamination of street clothing. A half-face , air purifying respirator with HEPA cartridges is optional. Note that any employee wearing a respirator must be enrolled in the Respiratory Protection Program and be qualified to wear a respirator.

Required Work Practices

- Barrier tape will be used to isolate the work area in such a way that staff, students, and the public cannot get within 10 ft of the work area.
- A warning sign should be posted outside any unsecured entry to the work site. Refer to the Signage Section of this Program (Section 13).
- Daily clean-up of the worksite will include removal of debris (with the exception of contaminated plastic sheeting) and disposal of protective clothing.
- Complete Lead Compliance Plan prior to beginning work.
- Identify and require the use of hand/face washing facility and change area.
- Personal air monitoring should be conducted periodically to confirm exposures remain below the OSHA Action Limit.
- For work occurring in occupied areas (i.e., office, cafeteria, gym, dormitory, apartments, study room, labs) the work area should be enclosed with, minimally, 6 mil plastic in a manner that prevents transfer of dust outside the work area.
- Remove all movable objects (desk, chairs, and books) within the enclosed work area. Non-movable objects should be securely covered with 6-mil plastic sheeting, as to prevent lead dust contamination. Facility Services employee entry to the work area will be limited to those individuals with documented Lead Awareness Training.
- For work occurring in unoccupied areas (i.e., hallway, stairwell, foyers, mechanical spaces, etc) prepare work area by placing 6mil plastic sheeting a minimum of six (6) feet horizontally out in all directions from the work area. Adequately secure plastic to ensure all debris and dust is collected on plastic.
- Cover all air vents within the work area.
- For exterior projects, capture all lead containing material and presumed lead containing material to prevent contamination of the surrounding environment (i.e. secure one layer of 6-mil plastic on the ground extending 10 feet beyond the perimeter of the worksite).
- Use care to minimize the production of dust from scraping or sanding. Use either wet sanding/scraping or HEPA filtration fitted equipment.
- After disturbance work is completed a HEPA vacuum should be used to remove any small debris and visible dust from interior/exterior surfaces and plastic sheeting.
- Visually inspect area for any debris resulting from work conducted. Remove any debris from area.
- Decontaminate Tyvek or coveralls with HEPA vacuum before leaving the regulated area.
- After work is completed, a HEPA vacuum should be used to remove any small debris and visible dust from all surfaces. After visible debris is removed from the plastic sheeting, it should be rolled inward and placed in a "hazardous" waste container, along with all disposable clothing. All "hazardous" waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.

Level 2 and 3 Tasks

Training - Employees engaged in Level 2 and 3 tasks must have received Occupational Exposure to Lead training within the past year.

PPE - Tyvek suit or coveralls to prevent contamination of street clothing. Depending upon the operation and expected exposure levels, all employees must wear, at a minimum, a powered air purifying respirator with tight-fitting face piece. Note that any employee wearing a respirator must be enrolled in the Respiratory Protection Program and be qualified to wear a respirator.

Required Work Practices

- Complete Lead Compliance Plan prior to beginning work.
- Lead dust/debris shall be contained to the work area by sealing all doors, windows, and air vents with 6-mil plastic sheeting. This may require turning off localized HVAC systems.
- The entrance to the work area should be equipped with an adequate air lock constructed of 6 mil plastic sheeting at a minimum. The air lock must control any dust migration or transfer out of the controlled work area.
- A three-stage decontamination unit, including equipment room, shower and clean room must be established at the entrance to the work area.
- Disposable coveralls must be donned prior to entering the work-site and contaminated coveralls must be doffed prior to exiting the work-site.
- Entry to the work area will be limited to workers with documented Occupational Exposure to Lead training.
- All furniture that cannot be removed from the work area should be covered in 6-mil plastic sheeting in a manner which provides protection from lead dust contamination.
- Place a minimum of 6-mil plastic sheeting on all finished floors in the work area, and tape all seams as necessary. The contractor must notify Facility Service if plastic sheeting is not appropriate for floor application and provide an alternative floor protection control method.
- Mechanical ventilation may not be used, unless resulting exhaust outside the work area is equipped with HEPA filtration and the termination of the exhaust is monitored in accordance with Section 15 of this Program.
- Barrier tape will be used to isolate the work area in such a way that staff, students, and the public cannot get within 10 ft of the work area.
- A warning sign should be posted outside any unsecured entry to the work site. Refer to the Signage Section of this Program (Section 13).
- Daily clean-up of the worksite will include removal of debris (with the exception of contaminated plastic sheeting) and disposal of protective clothing.
- After lead project work is completed, a HEPA vacuum should be used to remove any small debris and visible dust from all surfaces. After visible debris is removed from the plastic sheeting, it should be rolled inward and placed in a

“hazardous” waste container, along with all disposable clothing. All “hazardous” waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.

- In situations where work is complete, but plastic sheeting was not used on the floor, a HEPA vacuum should be used to remove any small debris and visible dust, followed by a wet mopping with lead specific detergent of the entire floor. All liquid waste must be treated as “hazardous” until otherwise determined by analysis and characterization.
- The work area may not be released for general use or occupancy until clearance wipe samples are collected and results reviewed and approved by EHS. Information on Clearance Criteria and associated sampling can be found in Section 16 of this Program.

Required exterior work practices for Level 2 and 3 Tasks include:

- Building occupants shall be notified to close windows and doors within 20 feet of work area until work is complete.
- Controls shall be in place to eliminate contaminating HVAC systems and air intakes that have the potential to draw in air from the work-site. Control methods must be submitted to EHS for review and approval.
- Capture all lead containing material and presumed lead containing material to prevent contamination of the surrounding environment (i.e. secure one layer of 6-mil plastic on the ground extending 10 feet beyond the perimeter of the worksite).
- Erect temporary fencing or barrier tape at a 20 foot perimeter around work-site.
- Daily clean-up of the worksite will include removal of debris, plastic sheeting, and disposal of coveralls. All “hazardous” waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.
- Keep all hazardous waste in a secure indoor area until disposal.

15.0 SAMPLING

USC requires all lead sampling to be conducted by qualified individuals, consultants, and labs. Additionally, all laboratory analysis of bulk, air, and wipe samples must be conducted by an AIHA approved lead laboratory.

15.1 BULK SAMPLING FOR LEAD IDENTIFICATION

The department managing the work may decide to conduct lead identification sampling to determine if a presumed lead containing material contains lead and requires lead management. The only method currently recognized is bulk sampling for laboratory analysis. Sampling may only be conducted by a qualified USC employee or an approved consulting firm.

At a minimum, a qualified person conducting lead identification sampling will:

- Have previous bulk sampling for lab analysis experience.
- Have a working understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.
- Capable of determining appropriate sampling methodologies documenting and submitting a “representative” sampling plan.

At a minimum, Lead Identification Sampling must provide the following:

- Sampling must be representative of the material selected. One sample is needed for each homogenous (same color and substrate) component and each individual component must be sampled separately. For example, if a door is painted 2 different colors, a sample is needed for each color, or if a wall is half plaster and half drywall, a sample is need for each substrate.
- A collection of all paint layers from the substrate, and minimize the collection of actual substrate.
- A record of the component, substrate, color, and location for each sample taken.
- Sampling results must be provided to the Department Managing the work and EHS.

15.2 AREA AIR SAMPLING

Facility Services must provide area air sampling for all Level 2 and 3 tasks, or when HEPA equipped ventilation is exhausted outside the work-site. Sampling may only be conducted by a qualified individual(s).

At a minimum, a qualified person conducting air sampling will:

- Have previous air sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Possess the ability to calibrate and maintain all air sampling equipment.
- Have an understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.
- Have the ability to answer questions on sampling procedures, laboratory results, and or, instrument readings.

At a minimum, Area Air Sampling must provide the following:

- One air sample which represents an area outside the worksite, no more than 3 feet from the entrance.
- One air sample at the termination of any mechanical ventilation device used in the work-site which is exhausted outside of the worksite.
- One sample that represents the closest occupied area, or adjacent public space.

- Area air sampling must be conducted for every shift where HEPA equipped ventilation is used or abrasive blasting is conducted.
- Analytical results of air samples must be provided by an American Industrial Hygiene Association accredited lab within 24 hours of sample collection.
- Area air sample results must be provided to EHS daily. EHS will review all air sample results and contact the department managing the work the next business day if results are at or above 30ug/m³. The results must contain the date, time, duration, associated room number, and a floor plan drawing that identifies sample location. An area air sample result at, or above 30ug/m³, for any shift, will be considered a breach in dust containment. All surfaces represented in the area sample are considered to be contaminated with lead dust and represent an exposure potential for future or existing building occupants.

Work must be stopped immediately and the following must occur:

- The affected area must be HEPA vacuumed, removing all visible dust from all affected surfaces.
- Clearance Dust Sampling must be conducted to ensure lead dust was removed. A re-clean of the area will be required until the University Clearance Criteria is met.

Information on Clearance Dust Sampling is provided below.

15.3 CLEARANCE DUST WIPE SAMPLING

Facility Services must provide Clearance Dust Wipe Sampling at the completion of the Level 2 and 3 tasks in which more than 2 square feet of a lead containing material is impacted. Results of the sampling will determine if the worksite is free of lead dust contamination and if the worksite can be opened for unrestricted access. Sampling will also provide confirmation that an area that was accidentally contaminated was sufficiently cleaned. Sampling may only be conducted by a qualified individual(s).

At a minimum, a qualified person conducting clearance sampling will:

- Have previous sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Have the ability to answer questions on sampling procedures and laboratory results.
- Be completely independent of the contractor conducting the lead work. In target housing (University Apartments) and child occupied facilities, the person conducting clearance sampling must possess EPA Lead Inspector or Risk Assessor certification.

At a minimum, Clearance Dust Wipe Sampling must provide the following:

- One representative floor dust wipe sample per room, or per every 1000 square foot of floor space for rooms over 1000 square foot in size. Sample locations will represent the areas that have the highest potential for contamination within the work-site, or areas that have been identified as contaminated.
- One dust wipe sample for every hand contact surface located in the work site, or hand contact surfaces that have been identified as contaminated.
- Clearance dust wipe samples shall be collected no sooner than one hour from the completion of work. Samples collected within an hour of the completion of work will not be considered accurate representations of actual conditions in the work area.
- Clearance dust wipe sampling shall be conducted after the worksite is HEPA vacuumed by the Contractor and all visible dust is removed and prior to use or occupancy.
- Analytical results of dust wipe samples must be provided by an American Industrial Hygiene Association accredited lab.
- Clearance dust wipe sample results must be provided to EHS for review. EHS will notify The University department managing the work the next business day if area testing results meets the Clearance Criteria, and or, the space can be released for unrestricted access. University Clearance Criteria is listed below.

Dust Wipe Clearance Criteria

Area	Clearance Criteria
All interior surfaces (eg., floors, stair treads, window sills)	100 ug/ft ²
All exterior horizontal surfaces extending 20-feet from work-site up to a height of 6-feet (eg., stairs, pavement, concrete, window sills)	400 ug/ft ²

The University department or contractor conducting lead work on campus shall be responsible for returning the work area to below the appropriate clearance level. In settings where baseline samples show existing lead concentrations above the clearance level, the contractor must clean the work area to the baseline level or below. If baseline data is used as clearance criteria, the department or contractor must contact EHS BEFORE work is conducted to request baseline wipe sampling. Failure to contact EHS before work is started will require use of the listed clearance limits.

Clearance dust wipe sample results above the Clearance Criteria represent surface lead contamination. Any areas that contain surface contamination must remain a restricted lead worksite, until a re-clean is completed and clearance dust wipes are collected by a third-party Sampling Technician and results reviewed for approval by EHS.

Note: Clearance Criteria for lead contamination in “Target Housing” or Child-Occupied Facilities must meet requirements listed in the US Department of Housing and Urban Development (HUD), “Guidelines for the Control of Lead-Based Paint Hazards in Housing.”

15.0 LEAD WASTE

There are comprehensive federal, state and local regulations for the management of hazardous waste. These rules apply to all University personnel; from those who initially generate the hazardous waste to those who arrange for waste disposal. The University is regulated as a hazardous waste generator. Strict regulatory requirements apply to labeling, handling, storing and disposing of hazardous wastes. In order to remain compliant with the Resource Conservation and Recovery Act (RCRA) solid waste must be reviewed to determine if it is a regulated waste. In the case of construction debris, there is a potential for lead contamination from lead based paint. Any waste which leaches lead at a rate of 5 parts per million or greater is considered to be a hazardous waste.

The University has determined that there are four types of lead contaminated waste which may be created as a result of maintenance and construction operations. These four types are:

- Dust – Any material with a surface area of less than 2 square inches, to include, but not limited to, paint scrapings, small bits of construction debris, and dust from drilling, sanding, cutting, etc.
- Debris – Any material with a surface area greater than or equal to 2 square inches in size, to include, but not limited to, Personal Protective Equipment (PPE), rags, wood, construction debris, paper, plastic, Scrap Metal which is not sent for recycling, etc.
- Water – Waste water from processes involving the removal of lead based paint or lead contaminated debris, to include, but not limited to, mop water, rinse water, etc.
- Scrap Metal – Any painted metal which is being discarded as a waste, and can be sent to a metal recycling facility, to include, but not limited to, railings, stairs, shutters, doors, etc.

Waste Sampling

Many wastes which are or have the potential to be contaminated with lead must be sampled by an approved Third Party Sampling Technician or by a qualified University employee and be submitted for testing to an EPA accredited lab for Toxicity Characteristic Leaching Procedure (TCLP) analysis.

For the purposes of this program, the University will require testing and analytical for all Water, and Debris, and for *large volumes of Dust on a case by case basis. Scrap Metal sent for recycling is not required to be tested.

**Note: Due to the cost of analytical it does not make sense to analyze insignificant amounts of material. Any small (less than 5 pounds) quantities of dust should be automatically managed as a hazardous waste and disposed of accordingly.*

EHS requires Facility Services use a qualified laboratory for sampling and analytical of the waste material. The lab provides a sampling service for a fee and all associated cost will be the responsibility of the department managing the work.

A proper sample must be representative of the waste. Proper sampling protocol will be ensured if employing the approved laboratory to sample and analyze the material. If the department managing the work chooses not to employ an approved laboratory, a sampling protocol must be submitted to the EHS for approval, five business days in advance of sampling.

EHS recommends that a representative waste sample be taken and results submitted to EHS prior to waste generation. By making a waste determination before work starts, the Contractor and the department managing the work can make the appropriate arrangements for storage and disposal of the waste in advance.

Waste Determination

Once the analytical results are received, a hazardous waste determination must be made by the contractor. Facility Services must submit a copy of sample results for review by EHS. Waste may only be removed from the worksite after EHS has made a waste determination, based on the analytical results.

Once materials are deemed to be a hazardous waste they must be managed as such. If the material is determined by EHS to be non-hazardous it may be treated as a Municipal Solid Waste, Construction Debris, or Scrap Metal and can be managed and removed by the contractor. The material cannot be determined to be non-hazardous until the EHS receives and reviews a copy of the analytical for review and notification of determination is given to the Hazardous Waste Manager (see description below). Only then can the material sampled be treated as non-hazardous.

APPENDIX 1

University of South Carolina

Office of Environmental Health and Safety

Initial Lead Project Notification

USC Building _____ / # _____ Floor _____ Room _____

Building Contact _____ PH # _____

Project Representative _____ PH # _____

General

Contractor _____ No. _____

Scope of Work (Including Engineering Controls):

Start Date ___/___/___ End Date ___/___/___ Hours ___:___ to ___:___

Baseline Wipe Samples Requested yes ___ no ___

Presumed Lead Containing Material Tested? yes ___ no ___

If yes, who tested the material and what were the results:

Fax Completed Form to EHS at (803) 777/5275 at least 15 days before start

APPENDIX 2

LEAD WORK WARNING SIGN