

Contract Documents and Specifications

For

Public Health Research Center Parking Lot Construction

For

University of South Carolina

State project # H27-I983

July 7, 2012

Design Team:

Chao and Associates

TABLE OF CONTENTS

PROJECT NUMBER: H27-I983

PROJECT NAME: Public Health Research Center Parking Lot Construction

SECTION

Table of Contents (<i>insert numbers of pages</i>).....	<u>2</u>
Invitation for Bids (SE-310).....	1
Instructions to Bidders (AIA Document A701 – 1997 Edition *).....	6
00201-0SE Standard Supplemental Instructions to Bidders	10
<i>[Insert supplemental project specific instructions to bidders if needed.]</i>	
Bid Bond (AIA A310).....	1
Standard Bid Form (SE-330).....	4
Standard Form of Agreement between Owner and Contractor (AIA Document A101 – 2007 Edition*).....	<u>1</u>
00501-0SE Standard Modifications to AIA A101-2007	3
<i>[Insert supplemental project specific modifications to AIA A101 if needed.]</i>	
General Conditions of the Contract for Construction (AIA Document A201 – 2007 Edition*).....	<u>1</u>
00811-Standard Supplementary Conditions	25
(Supplement to AIA Document A201-2007 Edition General Conditions of the Contract)	
<u>USC Supplemental General Conditions for Construction Projects</u>	<u>3</u>
<u>Construction Change Order (SE-480)</u>	<u>1</u>
<u>Contractor's One-Year Guarantee</u>	<u>1</u>
<i>[Insert additional, project specific, supplementary conditions if needed.] (For the above AIA Documents do not “edit” the document; use them as cover sheets and attach the OSE modification documents.) (*Insert either an original AIA document or a “replacement page.” – See Chapter 5.)</i>	
Performance Bond (SE-355).....	2
Labor and Material Payment Bond (SE-357).....	2

TECHNICAL SPECIFICATIONS

(List the technical specifications using the same Divisions numbers and titles as shown on the individual technical specification sections. Provide the issue date and revision number for each section.)

Division 2 - Site Work

02068 Erosion and Sediment Control	3
02100 Clearing and Grubbing	1
02220 Excavation and Backfill	8
02261 Rip Rap	2
02451 Reinforced Concrete Pipe	3
02510 Stone Base Course	2
02511 Hot-Mixed Asphalt Paving	3
02520 Portland Cement Concrete Paving	8
02567 Catch Basin	3

SE-310
REQUEST FOR ADVERTISEMENT

2011 Edition
Rev. 7/20/2011

PROJECT NAME: Public Health Research Center Parking Lot Construction

PROJECT NUMBER: H27-I983

PROJECT LOCATION: Corner of Park and College Streets, Cola., SC 29208

Contractor may be subject to performance appraisal at close of project

BID SECURITY REQUIRED? Yes ☒ No ☐

PERFORMANCE & PAYMENT BONDS REQUIRED? Yes ☒ No ☐

CONSTRUCTION COST RANGE: \$ 200,000 - \$ 300,000

DESCRIPTION OF PROJECT: Remove existing asphalt paving from site and rework storm drainage area. Add asphalt paving at new parking lot. Small and minority business participation is encouraged. All bidders are responsible for obtaining updates from the USC Purchasing website: <http://purchasing.sc.edu>. See Facilities and Construction Solicitations and Awards.

A/E NAME: Chao and Associates

A/E CONTACT: Charlie Deep

A/E ADDRESS: Street/PO Box: 7 Clusters Court

City: Columbia

State: SC ZIP: 29210-

EMAIL: charlied@chaoinc.com

TELEPHONE: 803-772-8420

FAX: 803-772-9120

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

BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM: <http://procurement.sc.edu>. See Facilities/Construction Solicitations and 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):*

N/A

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

DATE: 7/26/2012 **TIME:** 11am **PLACE:** 743 Greene St., Columbia, SC 29208, Conf Rm 53

AGENCY: University of South Carolina

NAME OF AGENCY PROCUREMENT OFFICER: Kay Keisler

ADDRESS: Street/PO Box: 743 Greene St

City: Columbia

State: SC ZIP: 29208-

EMAIL: kkeisler@fmc.sc.edu

TELEPHONE: 803-777-5812

FAX: 803-777-8739

BID CLOSING DATE: 8/9/2012 **TIME:** 2:00pm **LOCATION:** 743 Greene St., Columbia, SC 29208, Conf Rm 53

BID DELIVERY ADDRESSES:

HAND-DELIVERY:

Attn: Kay Keisler

743 Greene St

Columbia, SC 29208

MAIL SERVICE:

Attn: Kay Keisler

743 Greene St

Columbia, SC 29208

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

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

DATE: _____

Section AIA A701-1997

Instruction to Bidders

Instruction to Bidders, AIA Document A701-1997 Edition, is incorporated into the Contract Documents by reference herein.

Copies of Instruction to Bidders, AIA Document A701-1997, may be obtained from the American Institute of Architects, 1735 New York Avenue, N.W., Washington, DC 20006, or from local AIA offices and reprographics offices.

Original AIA Documents on file at the Office of the University of South Carolina Construction Services, 743 Greene Street, Columbia, SC, 29208.

End of Section AIA A701-1997

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

OWNER: University of South Carolina**PROJECT NUMBER:** H27-1983**PROJECT NAME:** Public Health Research Center Parking Lot Construction**PROJECT LOCATION:** Corner of Park and College Streets, Columbia, SC 29208**PROCUREMENT OFFICER:** Kay Keisler**1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

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

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

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

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

2. MODIFICATIONS TO A701-1997

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

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

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

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

2.4. *In Section 2.1.1:*

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

Insert the following at the end of this section:

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

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

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

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

2.6. Insert the following Sections 2.2 through 2.6:

2.2 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

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

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

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

- (i) Those prices;
- (ii) The intention to submit an bid; or
- (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit an bid for the purpose of restricting competition.

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

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

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

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

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

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

2.3 DRUG FREE WORKPLACE

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

2.4 CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS

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

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

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

(B) Have not, within a three-year period preceding this bid, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in

OSE FORM 00201

STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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 nonresponsive.

(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

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

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.sceind.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.

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

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

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

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

9.4 POSTING OF INTENT TO AWARD

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

Room or Area of Posting: Lobby

Building Where Posted: Facilities Management Center

Address of Building: 743 Greene St., Columbia, SC 29208

WEB site address (if applicable): <http://purchasing.sc.edu>, "Facilities/Construction Solicitations and Awards"

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

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

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

OSE FORM 00201**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

Section AIA A310-2010

Bid Bond

Bid Bond, AIA Document A310-2010 Edition, is incorporated into the Contract Documents by reference herein.

Copies of Bid Bond, AIA Document A310-2010, may be obtained from the American Institute of Architects, 1735 New York Avenue, N.W., Washington, DC 20006, or from local AIA offices and reprographics offices.

Original AIA Documents on file at the Office of the University of South Carolina Construction Services, 743 Greene Street, Columbia, SC, 29208.

End of Section AIA A310-2010

SE-330 – LUMP SUM BID BID FORM

2011 Edition
Rev. 9/21/2011

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 Public Health Research Center Parking Lot Construction

PROJECT NUMBER H27-I983

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 existing asphalt paving from site and rework storm drainage area. Add asphalt paving at new parking lot.

_____, which sum is hereafter called the Base Bid.

(Bidder - insert Base Bid Amount on line above)

**SE-330 – LUMP SUM BID
BID FORM**

2011 Edition
Rev. 9/21/2011

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

ALTERNATE # 1 (Brief Description): _____

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

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

ALTERNATE # 2 (Brief Description): _____

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

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

ALTERNATE # 3 (Brief Description): _____

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

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

**SE-330 – LUMP SUM BID
BID FORM**

2011 Edition
Rev. 9/21/2011

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

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

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

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

**SE-330 – LUMP SUM BID
BID FORM**

**2011 Edition
Rev. 9/21/2011**

**INSTRUCTIONS FOR
SUBCONTRACTOR LISTING**

1. Section 7 of the Bid Form sets forth a list of subcontractor specialties for which bidder is required to identify by name the subcontractor(s) Bidder will use to perform the work of each listed specialty. Bidder must identify only the subcontractor(s) who will perform the work and no others.
2. For purposes of subcontractor listing, a Subcontractor is an entity who will perform work or render service to the prime contractor to or about the construction site. Material suppliers, manufacturers, and fabricators that will not perform physical work at the site of the project but will only supply materials or equipment to the bidder or proposed subcontractor(s) are not subcontractors and Bidder should not insert their names in the spaces provided on the bid form. Likewise, Bidder should not insert the names of sub-subcontractors in the spaces provided on the bid form but only the names of those entities with which bidder will contract directly.
3. Bidder must only insert the names of subcontractors who are qualified to perform the work of the listed specialties as specified in the Bidding Documents and South Carolina Licensing Laws.
4. If under the terms of the Bidding Documents, Bidder is qualified to perform the work of a specialty listed and Bidder does not intend to subcontract such work but to use Bidder's own employees to perform such work, the Bidder must insert its own name in the space provided for that specialty.
5. If Bidder intends to use multiple subcontractors to perform the work of a single specialty listing, Bidder must insert the name of each subcontractor Bidder will use, preferably separating the name of each by the word **"and"**. If Bidder intends to use both his own employees to perform a part of the work of a single specialty listing and to use one or more subcontractors to perform the remaining work for that specialty listing, bidder must insert his own name and the name of each subcontractor, preferably separating the name of each with the word **"and"**.
6. Bidder may not list subcontractors in the alternative nor in a form that may be reasonably construed at the time of bid opening as a listing in the alternative. A listing that requires subsequent explanation to determine whether or not it is a listing in the alternative is non-responsive. If bidder intends to use multiple entities to perform the work for a single specialty listing, bidder must clearly set forth on the bid form such intent. Bidder may accomplish this by simply inserting the word **"and"** between the name of each entity listed for that specialty. Owner will reject as non-responsive a listing that contains the names of multiple subcontractors separated by a blank space, the word **"or"**, a virgule (that is a /), or any separator that the Owner may reasonably interpret as a listing in the alternative.
7. If Bidder is awarded the contract, bidder must, except with the approval of the owner for good cause shown, use the listed entities to perform the work for which they are listed.
8. If bidder is awarded the contract, bidder will not be allowed to substitute another entity as subcontractor in place of a subcontractor listed in Section 7 of the Bid except for one or more of the reasons allowed by the SC Code of Laws.
9. Bidder's failure to insert a name for each listed specialty subcontractor will render the Bid non-responsive.

SE-330 – LUMP SUM BID BID FORM

2011 Edition
Rev. 9/21/2011

§ 8. LIST OF MANUFACTURERS, MATERIAL SUPPLIERS, AND SUBCONTRACTORS OTHER THAN SUBCONTRACTORS LISTED IN SECTION 7 ABOVE (FOR INFORMATION ONLY): Pursuant to instructions in the Invitation for Bids, if any, Bidder will provide to Owner upon the Owner's request and within 24 hours of such request, a listing of manufacturers, material suppliers, and subcontractors, other than those listed in Section 7 above, that Bidder intends to use on the project. Bidder acknowledges and agrees that this list is provided for purposes of determining responsibility and not pursuant to the subcontractor listing requirements of SC Code Ann § 11-35-3020(b)(i).

§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES

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

b. **LIQUIDATED DAMAGES:** Bidder further agrees that from the compensation to be paid, the Owner shall retain as Liquidated Damages the sum of \$150.00 for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This sum is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

§ 10. AGREEMENTS

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

§ 11. ELECTRONIC BID BOND

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

Electronic Bid Bond Number: _____

Signature and Title: _____

**SE-330 – LUMP SUM BID
BID FORM**

2011 Edition
Rev. 9/21/2011

BIDDER'S TAXPAYER IDENTIFICATION

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER: _____

OR

SOCIAL SECURITY NUMBER: _____

CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS

Classification(s) & Limits: _____

Subclassification(s) & Limits: _____

SC Contractor's License Number(s): _____

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

SIGNATURE

BIDDER'S LEGAL NAME: _____

ADRESS: _____

BY: _____
(Signature)

DATE: _____

TITLE: _____

TELEPHONE: _____

EMAIL: _____

Section AIA A101-1997

Standard Form of Agreement Between Owner and Contractor

The Standard Form of Agreement between Owner and Contractor, AIA Document A101-1997 Edition, shall be the form of agreement and is incorporated into the Contract Documents by reference herein.

Copies of Standard Form of Agreement between Owner and Contractor , AIA Document A101-1997, may be obtained from the American Institute of Architects, 1735 New York Avenue, N.W., Washington, DC 20006, or from local AIA offices and reprographics offices.

Original AIA Documents on file at the Office of the University of South Carolina Construction Services, 743 Greene Street, Columbia, SC, 29208.

End of Section AIA A101-1997

STANDARD MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

OWNER: University of South Carolina

PROJECT NUMBER: H27-I983

PROJECT NAME: Public Health Research Center Parking Lot Construction

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%)."

**STANDARD MODIFICATIONS TO AGREEMENT BETWEEN
OWNER AND CONTRACTOR**

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

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

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

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

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

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

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

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

Name: Tom Opal
Title: Senior Project Manager
Address: 743 Greene Street, Cola., SC 29208
Telephone: 803-777-7076 FAX: 803-777-8045
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, Cola., SC 29208
Telephone: 803-777-5811 FAX: 803-777-8739
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: _____

**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: Charlie Deep

Title: Senior Engineer/Project Manager

Address: 7 Clusters Ct., Columbia, SC 29210

Telephone: 803-772-8420 **FAX:** 803-772-9120

Email: charlied@chaoinc.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

Section AIA A201-1997

General Conditions of the Contract

The General Conditions of the Contract for Construction, AIA Document A201-1997 Edition, shall be the form of General Conditions and is incorporated into the Contract Documents by reference herein.

Copies of the General Condition, AIA Document A201-1997, may be obtained from the American Institute of Architects, 1735 New York Avenue, N.W., Washington, DC 20006, or from local AIA offices and reprographics offices.

Original AIA Documents on file at the Office of the University of South Carolina Construction Services, 743 Greene Street, Columbia, SC, 29208.

End of Section AIA A201-1997

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

OWNER: University of South Carolina**PROJECT NUMBER:** H27-I983**PROJECT NAME:** Public Health Research Center Parking Lot Construction**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.

OSE FORM 00811
STANDARD SUPPLEMENTARY CONDITIONS

2011 Edition

Rev. 9/7/2011

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.

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, as documented by invoices, and the allowances under Section 3.8.2.1.

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

acceptable to the Owner,

3.22 *Delete Section 3.9.2 and substitute the following:*

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

STANDARD SUPPLEMENTARY CONDITIONS

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

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

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

3.24 *Delete Section 3.10.3 and substitute the following:*

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

☐ The construction schedule shall be in a detailed precedence-style critical path management (CPM) or primavera-type format satisfactory to the Owner and the Architect that shall also (1) provide a graphic representation of all activities and events that will occur during performance of the work; (2) identify each phase of construction and occupancy; and (3) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents and attached to the Agreement as Exhibit "A." If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The 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."*

STANDARD SUPPLEMENTARY CONDITIONS

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.

STANDARD SUPPLEMENTARY CONDITIONS

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

STANDARD SUPPLEMENTARY CONDITIONS

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;

STANDARD SUPPLEMENTARY CONDITIONS

- .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:

STANDARD SUPPLEMENTARY CONDITIONS

- .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.

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS****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.

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

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

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

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.

STANDARD SUPPLEMENTARY CONDITIONS

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."

STANDARD SUPPLEMENTARY CONDITIONS

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

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

3.81 *Delete 11.1.2 and substitute the following:*

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

(1) COMMERCIAL GENERAL LIABILITY:

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

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

(a) Combined Single Limit	<u>\$1,000,000</u>
---------------------------------	--------------------

(3) WORKER'S COMPENSATION:

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

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

3.82 *Delete Section 11.1.3 and substitute the following:*

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

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

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

STANDARD SUPPLEMENTARY CONDITIONS

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.

STANDARD SUPPLEMENTARY CONDITIONS

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 be 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.

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

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.

STANDARD SUPPLEMENTARY CONDITIONS

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.

STANDARD SUPPLEMENTARY CONDITIONS

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

STANDARD SUPPLEMENTARY CONDITIONS

- .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;

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

- .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.

STANDARD SUPPLEMENTARY CONDITIONS

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)

STANDARD SUPPLEMENTARY CONDITIONS

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.

OSE FORM 00811**STANDARD SUPPLEMENTARY CONDITIONS**

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 are by the Owner

STANDARD SUPPLEMENTARY CONDITIONS

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

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

None

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

Refer to specifications

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 specifications

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

None

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

None

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 1 times per week. Construction waste must not be placed in University dumpsters. THE CONSTRUCTION SITE MUST BE THOROUGHLY CLEANED WITH ALL TRASH PICKED UP AND PROPERLY DISPOSED OF ON A DAILY BASIS AND THE SITE MUST BE LEFT IN A SAFE AND SANITARY CONDITION EACH DAY. THE UNIVERSITY WILL INSPECT JOB SITES REGULARLY AND WILL FINE ANY CONTRACTOR FOUND TO BE IN VIOLATION OF THIS REQUIREMENT AN AMOUNT 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.

CONSTRUCTION CHANGE ORDER**Change Order No.:****Agency:** University of South Carolina**Project Number:** H27-I983**Project Name:** Public Health Research Center Parking Lot Construction**Contractor:****Contract Dated:****For:****This Contract is changed as follows:** *(Insert description of change in space provided below)***Adjustments in the Contract Sum:**

1. Original Contract Sum: -----		
2. Change in Contract Sum by previously approved Change Orders: -----		
3. Contract Sum prior to this Change Order: -----		\$0.00
4. Amount of this Change Order: -----		
5. New Contract Sum, including this Change Order: -----		\$0.00

Adjustments in Contract Time:

1. Original Substantial Completion Date: -----	
2. Sum of previously approved increases and decreases: -----	Days
3. Changes in Days for this Change Order: -----	Days
4. New Substantial Completion Date: -----	

Contractor Acceptance:

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

Architect Recommendation for Acceptance:

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

Agency Acceptance and Certification

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

☐ Change is within Agency Construction Procurement Certification amount of _____

☐ Change is not within Agency Construction Procurement Certification amount
Office of the State Engineer Authorization for change not within Agency Construction Procurement Certification:

Signature of OSE Project Manager: _____
Date: _____

Project Name: Public Health Research Center Parking Lot Construction

Project Number: H27-I983

University of South Carolina

CONTRACTOR'S ONE YEAR GUARANTEE

STATE OF _____

COUNTY OF _____

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

Defects or failures resulting from abuse by Owner.

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

[Name of Contracting Firm]

*By _____

Title _____

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

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

_____ State

My commission expires _____

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: PHRC Parking Lot Construction

State Project Number: H27-I983

Brief Description of Awarded Work, as found on the SE-330, Bid Form: Remove existing asphalt from site and rework storm drainage area. Add asphalt paving at new parking lot.

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

Name: Chao and Associates

Address: 7 Clusters Court
Columbia, SC 29210

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

11. Definitions

11.1 Balance of the Contract Sum: The total amount payable by the Agency to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts to be received by the Agency in settlement of insurance or other Claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Contract.

11.2 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform the Contract or otherwise to comply with the terms of the Contract.

SE-357

Labor 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: PHRC Parking Lot Construction

Project Number: H27-I983

Brief Description of Awarded Work, as found on the SE-330, Bid Form: Remove existing asphalt paving from site and rework storm drainage area. Add asphalt paving at new parking lot.

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

Name: Chao and Associates

Address: 7 Clusters Court
Columbia, SC 29210

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

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

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

CONTRACTOR

SURETY

By: _____
(Seal)

By: _____
(Seal)

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____
(Attach Power of Attorney)

Witness: _____

Witness: _____

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

Labor and Material Payment Bond**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Agency to pay for all labor, materials and equipment required for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to the Agency, this obligation shall be null and void if the Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
 - 2.2 Defends, indemnifies and holds harmless the Agency from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract.
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. With respect to Claimants, and subject to the provisions of Title 29, Chapter 5 and the provisions of §11-35-3030(2)(c) of the SC Code of Laws, as amended, the Surety's obligation under this Bond shall arise as follows:
 - 4.1 Every person who has furnished labor, material or rental equipment to the Contractor or its subcontractors for the work specified in the Contract, and who has not been paid in full therefore before the expiration of a period of ninety (90) days after the date on which the last of the labor was done or performed by him or material or rental equipment was furnished or supplied by him for which such claim is made, shall have the right to sue on the payment bond for the amount, or the balance thereof, unpaid at the time of institution of such suit and to prosecute such action for the sum or sums justly due him.
 - 4.2 A remote claimant shall have a right of action on the payment bond upon giving written notice by certified or registered mail to the Contractor within ninety (90) days from the date on which such person did or performed the last of the labor or furnished or supplied the last of the material or rental equipment upon which such claim is made.
 - 4.3 Every suit instituted upon a payment bond shall be brought in a court of competent jurisdiction for the county or circuit in which the construction contract was to be performed, but no such suit shall be commenced after the expiration of one year after the day on which the last of the labor was performed or material or rental equipment was supplied by the person bringing suit.
5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 5.1 Send an answer to the Claimant, with a copy to the Agency, within sixty (60) days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 5.2 Pay or arrange for payment of any undisputed amounts.
 - 5.3 The Surety's failure to discharge its obligations under this paragraph 5 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a claim. However, if the Surety fails to discharge its obligations under this paragraph 5, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs to recover any sums found to be due and owing to the Claimant.
6. Amounts owed by the Agency to the Contractor under the

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

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

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

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

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

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

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

13. DEFINITIONS

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

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

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

SECTION 02068 - EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 Summary: Work outlined in this section includes:

- A. Installation of silt barriers such as silt fence, inlet protection, ect.
- B. Installation of temporary sediment traps and rock check dams.
- C. Seeding for the purpose of stabilization or erosion control.
- D. Installation of rip-rap, erosion control matting, and sod for slope stabilization.
- E. Removal of erosion control devices.

1.2 Referenced Standards:

- A. South Carolina State Department of Transportation (SCDOT): Standard Specification for Highway Construction, 2007 Edition
- B. South Carolina Code of Regulations, Chapter 72, Article 2 (Erosion & Sediment Reduction & Stormwater Management Regulations)
- C. Guide to Site Development and Best Management Practices for Storm Water Management and Sediment Control (SCLRCC).

1.3 Submittals: Proposed materials to be employed, for siltation control and preventing erosion damage shall be submitted for approval. Submittals shall include a list of proposed materials including manufacturer's product data.

1.4 Erosion Control Principles: The following erosion control principles shall apply to the land grading and construction phases:

- A. Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion.
- B. Whenever feasible, natural vegetation shall be retained and protected.
- C. Extent of area which is exposed and free of vegetation shall be kept within practical limits.
- D. Temporary seeding, mulching, or other suitable stabilization measures shall be used to protect exposed critical areas during prolonged construction or other land disturbance.
- E. Drainage provisions shall accommodate increased runoff resulting from modifications of soil and surface conditions during and after development or disturbance. Such provisions shall be in addition to existing requirements.
- F. Sediment shall be retained on-site.
- G. Erosion control devices shall be installed as early as possible in the construction sequence prior to start of clearing and grubbing operations and excavation work.
- H. Cut and fill slopes and stockpiled materials shall be protected to prevent erosion. Slopes shall be protected with permanent erosion protection when erosion exposure period is expected to be greater than or equal to two (2) weeks, and temporary erosion protection when erosion exposure period is expected to be less than two (2) weeks.
- I. Permanent erosion protection shall be accomplished by seeding with grass and covering with an erosion protection material, as appropriate for prevailing conditions.
- J. Temporary erosion protection shall be accomplished by covering with erosion protection materials, as appropriate for prevailing conditions.
- K. Except where specified slope is indicated on Drawings, fill slopes shall be limited to a grade of 2:1 (horizontal: vertical) cut slopes shall be limited to a grade of 1.5:1.

- 1.5 **Section Description:** Provide all equipment and materials, and do all work necessary to construct a complete erosion and sediment control program for minimizing erosion and siltation during the construction phase of the project. The Contractor shall provide additional erosion and sediment control materials and methods as required to affect the erosion and siltation control principles specified herein.

PART 2 - PRODUCTS

- 2.1 **Silt Fence:** Silt fence shall consist of woven filter fabric attached to steel posts with wire or nylon ties. Fence shall be a minimum of 2 ft. high measured from the ground surface, and shall have 8 inches of the woven fabric embedded in the ground per the details on the plans. The posts shall be 5 foot long 1.25 lb per foot steel "T" section fence posts with stabilization plate spaced welded to the post near the bottom. Posts shall be installed at a maximum of 6' apart. Filter fabric shall be selected from one of the products listed on SCDOT's Qualified Products List 34 , or an approved equal:
- A. Silt fence shall be supported by steel posts, driven a minimum of 18". into the ground. Posts shall be spaced 6 ft. o.c. maximum.
 - B. Fencing other than that specified above shall be subject to review and acceptance by the Engineer.
- 2.2 **Seeding:** Grass seed for temporary cover and permanent cover shall be previous year's crop. Not more than 0.5% by weight shall be weed seed and not more than 1.75% by weight crop seed. Seed shall be delivered to site in sealed containers, labeled with name of seed grower and seed formula, in form stated below. Seed shall be dry and free of mold. Seed shall meet the requirements of SCDOT Standard Specifications for Seeding.
- Seed shall conform to the following requirements:
- A. All seed must meet the requirements of the state seed laws including the labeling requirements for showing pure live seed, (PLS - purity x germination), name and type of seed.
 - B. Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of use on the project. Each variety of seed shall be furnished and delivered in separate bags or containers.
 - C. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Architect/Engineer. The amount and type of seed planted per acre shall be as specified on the plans.
 - D. All seed shall be treated with fungicide approved by the Engineer.
 - E. Seed application rate shall conform to SCDOT Standard Specifications or at the rate specified on the plans, whichever is greater.
 - F. Apply mulch to retain adequate moisture near the soil surface and assist with germination in accordance with SCDOT Standard Specifications.
- 2.3 **Rip-Rap:** Rip-rap shall consist of hard quarry of field stone and shall be of such quality that it will be resistant to exposure to the action of water and air. Stone shall consist of well graded mixture of 6" to 8" stone.
- 2.4 **Check Dam:** Check dams may be placed in swale and ditch sections to reduce velocities and erosion. Check dams shall consist of 12 inch or hand placed sized rip rap. The Contractor shall place the stone at locations shown on the plans and in other areas as approved by the Engineer where erosion occurs. The check dams shall be cleaned and otherwise maintained by the Contractor on a regular basis.
- 2.5 **Sediment Tubes:** Sediment tubes shall be a minimum of 10 feet long, 18 inches in diameter and shall conform to the material and installation requirements in SCDOT Standard Specifications including 80% Total Suspended Solids filtering efficiency performance measured per ASTM D5141 or ASTM D7351.

PART 3 – EXECUTION

- 3.1 Seeding: Grass seed shall be spread by mechanical spreader at the specified rate. Following seeding, area shall be lightly raked to mingle seed with the top 1/8 to 1/4 in. of soil. Areas shall then be smoothed and rolled.
 - 3.1.1 Following rolling, entire area shall be watered until equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge seed. Watering shall be repeated thereafter as frequently as required to prevent drying of surface, until grass attains an average height of 1-1/2 in.
 - 3.1.2 At the Contractor's option, seed may be spread by the hydroseeding method, utilizing power equipment commonly used for that purpose. Seed and mulch shall be mixed and applied to achieve application quantities specified herein for the conventional seeding method, with mulch applied at the rate of 2700 lb. dry weight of mulch per acre. A mulching machine, acceptable to the Engineer, shall be equipped to eject the thoroughly wet mulch material at a uniform rate to provide the mulch coverage specified. Other provisions specified above for conventional seeding shall apply to hydroseeding.
 - A. If the results of hydroseeding application are unsatisfactory, the mixture and/or application rate and methods shall be modified to achieve the required results.
 - B. After the grass has appeared, all areas and parts of areas which fail to show a uniform stand of grass, for any reason whatsoever, shall be re-seeded and such areas and parts of areas seeded repeatedly until all areas are covered with a satisfactory growth of grass.
- 3.2 Silt Fence: Silt fence shall be constructed and installed as shown on the plans, prior to start of clearing and grubbing operations.
- 3.3 Maintenance And Removal Of Erosion Control Devices: Wetland areas, water courses, and drainage swales adjacent to construction activities shall be monitored weekly and after each rainfall event for evidence of silt intrusion and other adverse environmental impacts, which shall be corrected immediately upon discovery.
- 3.4 Culverts and drainage ditches shall be kept clean and clear of obstructions during construction period.
- 3.5 Erosion Control Devices
 - A. Sediment behind the erosion control device shall be checked twice each month and after each heavy rain. Silt shall be removed if greater than 6 in. deep.
 - B. Condition of erosion control device shall be checked weekly and after every significant rainfall or more frequently as required. Damaged and/or deteriorated items shall be replaced. Erosion control devices shall be maintained in place and in effective condition.
 - C. Sediment Tubes shall be inspected frequently and maintained or replaced as required to maintain both their effectiveness and essentially their original condition. Underside of tubes shall be kept in close contact with the earth below at all times, as required to prevent water from washing beneath tubes.
 - D. Sediment deposits shall be disposed of off-site, in a location and manner which will not cause sediment nuisance elsewhere.
- 3.6 Removal of Erosion Control Devices
 - A. Erosion control devices shall be maintained until all disturbed earth has been paved or vegetated, at which time they shall be removed. After removal, areas disturbed by these devices shall be re-graded and seeded.
 - B. Erosion protection material shall be kept securely anchored until acceptance of completed slope or entire project, whichever is later.

END OF SECTION 02068

SECTION 02100 - CLEARING AND GRUBBING

PART 1 - GENERAL

- 1.1 Description Of Work: This work includes clearing, grubbing, removing, and disposing of all vegetation, debris, and obstructions within the construction limits or right-of-way except such objects as are designated to remain, or are to be otherwise removed in accordance with the Drawings or other sections of these Specifications. This work also includes the preservation from injury or defacement of all vegetation and objects designated to remain.

PART 2 - PRODUCTS Not applicable to this Section.

PART 3 – EXECUTION

- 3.1 Clearing: Perform all clearing before other construction work in the same general area is started. This consists of clearing and removal from the site all trees, downed timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, fences, structures, debris and rubbish of any nature, natural obstructions or such material which in the opinion of the Engineer is unsuitable for fill material, within the limits of disturbance.
- 3.2 Trees unavoidably falling outside the specified limits must be cut up, removed and disposed of in a satisfactory manner. In order to minimize damage to trees that are to be left standing, fell trees toward the center of area being cleared. Preserve and protect from injury all trees not required to be removed; prune and paint all trees damaged by clearing operation in a satisfactory manner as approved by the Owner/Engineer.
- 3.3 Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.
- 3.4 Grubbing: Grub and remove from the site all stumps, roots, matted roots, buried logs, brush, grass, foundations, and other unsatisfactory materials. Grub out tap roots over 1-1/2 inches in diameter to a depth of at least 18 inches below the surface of the ground. Remove all spoil material from the site or burn as herein described.
- 3.5 Removal Of Spoil Materials: Remove all spoil materials from the site or burn on the site (if permitted by local law and the Owner) in strict accordance with local laws and regulations. Place piles for burning either in the cleared area near the center or in adjacent open areas where no damage to trees, other vegetation, or other property will occur. The Contractor will be responsible for controlling fires in compliance with all federal, state, and local laws and regulations relative to building fires at the site. Remove, or dispose of in an acceptable manner, all ashes resulting from burning.
- 3.6 Protection Of Existing Improvements: Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements indicated to remain in place. Protect improvements on adjoining properties as well as those on Owner's property or easement. Restore any improvements to their original condition, as acceptable to the Owner or other parties or authorities having jurisdiction.
- 3.7 Right To Wood And Logs: All logs and other wood removed in the course of clearing shall become the property of the Contractor and be removed from the job site.
- 3.8 Fences: Remove fences as required for completion of the work within the designated limits. Provide temporary fencing where necessary. Restore existing fences as soon as practicable and do not leave until the end of the construction period.

END OF SECTION 02100

SECTION 02220 - EXCAVATION AND BACKFILL

PART 1 - GENERAL

- 1.1 Description Of Work: The extent of excavation and backfill is limited to the areas of construction, and includes (but is not necessarily limited to) stockpiling of topsoil, site grading, excavation of trenches, filling, backfilling, compaction, finish grading, and spreading of topsoil. Perform all excavation, dewatering, sheeting, bracing, and backfilling in such a manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures.
- 1.2 Quality Assurance
 - A. Referenced Standards: Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards.
 1. ASTM D 698 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12 inch Drop.
 2. ASTM D 3282 Recommended Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
- 1.3 Soil Testing And Inspection Service: All compaction tests of all fill areas will be made by an independent testing laboratory. The independent testing laboratory shall be contracted directly with owner for their services, but coordination of all of their work shall be the responsibility of the contractor.
- 1.4 Rework any fill areas which fail to meet the compaction requirements as herein specified and perform this work at no additional cost to the Owner. Testing of fill areas will be provided by the Owner, except that tests which reveal nonconformance with the Specifications and all succeeding tests for the same area, until conformance with the Specifications is established, shall be at the expense of the Contractor.
- 1.5 Job Conditions
 - A. Existing Utilities: Locate existing underground utilities in the areas of work. Verify all utility locations with authorities providing utilities and a utility location service. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
 - B. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer immediately for directions as to procedure. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of utility companies.
 - C. Do not interrupt existing utilities serving facilities occupied and used by others, except when permitted in writing by the Owner, and then only after acceptable temporary utility services have been provided.
 - D. Demolish, and completely remove from site, existing underground utilities that conflict with construction and are no longer active. Coordinate with utility companies for shut-off of services if lines are active.
- 1.6 Temporary Protection: Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- 1.7 Sheeting And Bracing: Make all excavations in accordance with the rules and regulations promulgated by the Department of Labor, Occupational Safety and Health Administration, "Safety and Health Regulations for Construction." Furnish, put in place, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures, roads, utilities, or other improvements.

PART 2 – PRODUCTS

2.1 Definitions

- A. Satisfactory Subgrade Soil Materials: Soils complying with ASTM D 3282, soil classification Groups A-1, A-2-4, A-2-5, and A-3.
- B. Unsatisfactory Subgrade Soil Materials: Soils described in ASTM D 3282, soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils, unless otherwise acceptable to the Engineer.
- C. Cohesionless Soil Materials: Gravels, sand-gravel mixtures, sands, and gravelly-sands.
- D. Cohesive Soil Materials: Clayey and silty gravels, sand-clay mixtures, gravel-silt mixtures, clayey and silty sands, sand-silt mixtures, clays, silts, and very fine sands.

2.2 Soil Materials

- A. Backfill And Fill Materials: Provide satisfactory soil materials for backfill and fill, free of masonry, rock, or gravel larger than 2 inches in any dimension, and free of metal, gypsum, lime, debris, waste, frozen materials, vegetable, and other deleterious matter. Use only excavated material that has been sampled, tested, and certified as satisfactory soil material.
- B. Topsoil: Provide a 4" thick layer of screened topsoil from offsite or stockpiled topsoil stripped from the site over all disturbed areas to be landscaped or grassed.

PART 3 – EXECUTION

- 3.1 Inspection: Examine the areas and conditions under which excavating and backfilling is to be performed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- 3.2 Excavation: Excavation consists of the removal and disposal of all materials encountered for footings, foundations, pipework, and other construction as shown on the Drawings. Perform all excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
- 3.3 Stripping: Remove all topsoil, vegetable matter, and organic materials over proposed excavations. The contractor shall stockpile the stripped materials that are suitable for reuse in areas selected by the owner.
- 3.4 Topsoil: Respread stripped topsoil to a depth of 4" over all landscape and grass areas. If suitable amounts of stripped topsoil are not present at the site, provide screened topsoil from an approved offsite location.
- 3.5 Excavation Classification: All excavation will be performed as unclassified excavation and includes excavation to required subgrade elevations regardless of the character of material encountered with the exception of "Rock" as defined herein.
 - A. Mass Rock Definition: Any material which cannot be ripped using a tracked dozer or similar equipment with a minimum draw force of 60,000 pounds pulling a single tooth ripper or excavated using a front end loader with a minimum bucket breakout force of 30,000 pounds should be considered mass rock.
 - B. Trench Rock Definition: Any material that cannot be excavated with a backhoe having a minimum bucket curling force of not less than 30,000 pounds fitted with rock teeth shall be considered trench rock.
- 3.6 Intermittent drilling, blasting, or ripping to increase production and not necessary to permit excavation of material encountered will be considered unclassified excavation.
- 3.7 Site Grading: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finish the surface within specified tolerances; compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

- 3.8 Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface. Shape the subgrade as indicated on the Drawings by forking, furrowing, or plowing so that the first layer of new material placed thereon will be well bonded to it.
- 3.9 Placement And Compaction: Place backfill and fill materials in layers not more than 6 inches in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to the required percentage of maximum density for each area classification. Do not place backfill or material on surfaces that are muddy, frozen, or contain frost or ice. Take care not to overcompact subsoils where pervious concrete is proposed.
- 3.10 In areas not accessible to rollers or compactors, compact the fill with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate the material by means of blade graders, harrows, or other approved equipment, until the moisture content of the mixture is satisfactory. Finish the surface of the layer by blading or rolling with a smooth roller, or a combination thereof, and leave the surface smooth and free from waves and inequalities.
- 3.11 Place backfill and fill materials evenly adjacent to structures, to the required elevations. Take care to prevent wedging action of backfill against structures. Carry the material uniformly around all parts of the structure to approximately the same elevation in each lift.
- 3.12 When existing ground surface has a density less than that specified under the subsection entitled COMPACTION for the particular area classification, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.
- 3.13 Grading Outside Building Lines: Grade to drain away from structures to prevent ponding of water. Finish surfaces free from irregular surface changes.
- 3.14 Planting Areas: Finish areas to receive topsoil to within not more than one inch above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.
- 3.15 Walks: Shape the surface of areas under walks to line, grade, and cross-section, with the finish surface not more than zero inches above or one inch below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
- 3.16 Pavements: Shape the surface of the areas under pavement to line, grade and cross section, with finish surface not more than 1/2-inch above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains. Include such operations as plowing, discing, and any moisture or aerating required to provide the optimum moisture content for compaction.
- 3.17 Fill low areas resulting from removal of unsatisfactory soil materials, obstructions, and other deleterious materials, using satisfactory soil material. Shape to line, grade, and cross section as shown on the Drawings.
- 3.18 Grading Surface Of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/4-inch when tested with a 10-foot straightedge.
- 3.19 Protection Of Graded Areas: Protect newly graded areas from traffic and erosion, and keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- 3.20 Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather prior to acceptance of work, scarify surface, reshape, and compact to required density prior to further construction.
- 3.21 Unauthorized Excavation: Unauthorized excavation consists of the removal of materials beyond indicated elevations without the specific direction of the Engineer. Under footings, foundations, bases, etc., fill unauthorized excavation by extending the indicated bottom elevation of the concrete to the bottom of the excavation, without altering the required top elevation. Lean concrete fill may be used to bring elevations to proper position only when acceptable to the Engineer. Elsewhere, backfill and

compact unauthorized excavations as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer.

- 3.22 Dewatering: Prevent surface water and subsurface or ground water from flowing into excavated areas by using berms or drainage ditches. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations. Dispose of all water pumped or drained from the work in a suitable manner without undue interference with other work, damage to pavements, other surfaces or property. Provide suitable temporary pipes, flumes or channels for water which may flow along or across the site of the work.
- 3.23 Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
- 3.24 Locate and retain soil materials away from edge of excavations.
- 3.25 Excavation For Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus one inch, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction required, and for inspection.
- 3.26 In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete is placed. Trim bottoms to required lines and grades to leave solid base to receive concrete. Final footing excavations should not be allowed to remain open overnight without covering unless permitted by Engineer.
- 3.27 Backfill Around Structures: Unless otherwise specified or indicated on the Drawings, use suitable material for backfill which was removed in the course of making the construction excavations. Do not use frozen material for the backfill and do not place backfill upon frozen material. Remove previously frozen material before new backfill is placed.
- 3.28 Material: Approved selected materials available from the excavations may be used for backfilling around structures. Obtain material needed in addition to that of construction excavations from approved banks or other approved deposits. Furnish all borrow material needed on the work. Place and compact all material, whether from the excavation or borrow, to make a dense, stable fill. Use fill material which contains no vegetation, masses of roots, individual roots over 18 inches long or more than 1/2-inch in diameter, stones over 2 inches in diameter, or porous matter. Organic matter must not exceed minor quantities.
- 3.29 Placing Backfill: Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking, or other damage. Make special leakage tests, if required, as soon as practicable after the structures are structurally adequate and other necessary work has been done. Use the best of the excavated materials in backfilling within 2 feet of the structure. Avoid unequal soil pressures by depositing the material evenly around the structure.
- 3.30 Place fill and backfill in layers not more than 6 inches thick, except as specified otherwise herein, and compact each layer evenly to the specified density. Do not backfill against concrete without Engineer's approval.
- 3.31 Trench Excavation: Perform all excavation of every description and of whatever substance encountered so that pipe can be laid to the alignment and depth shown on the Drawings.
- 3.32 Brace and shore all trenches, where required, in accordance with the rules and regulations, promulgated by the Department of Labor, Occupational Safety and Health Administration, "Safety and Health Regulations for Construction".
- 3.33 Make all excavations by open cut unless otherwise specified or indicated on the Drawings.
- 3.34 Width Of Trenches: Excavate trenches sufficiently wide to allow proper installation of pipe, fittings and other materials and not more than 12 inches clear of pipe on either side at any point. Do not widen trenches by scraping or loosening materials from the sides. Where supports, and sheeting and bracing are required, trench may be of extra width so as to permit the placing of the trench supporting material.

- 3.35 Trench Excavation In Earth: Earth excavation includes all excavation of whatever substance encountered. In locations where pipe is to be bedded in earth excavated trenches, fine grade the bottoms of such trenches to allow firm bearing for the bottom of the pipe on undisturbed earth. Where any part of the trench has been excavated below the grade of the pipe, fill the part excavated below such grade with pipe bedding material and compact at the Contractor's expense.
- 3.36 Trench Excavation In Fill: If pipe is to be laid in embankments or other recently filled material, first place the fill material to the finish grade or to a height of at least one foot above the top of the pipe, whichever is the lesser. Take particular care to ensure maximum consolidation of material under the pipe location. Excavate the pipe trench as though in undisturbed material.
- 3.37 Trench Bottom In Poor Soil: Excavate and remove unstable or unsuitable soil to a width and depth, as directed by the Engineer, and refill with a thoroughly compacted gravel bedding.
- 3.38 Bell Holes: Provide bell holes at each joint to permit the joint to be made properly and to provide a continuous bearing and support for the pipe.
- 3.39 Trench Backfill: Unless otherwise specified or indicated on the Drawings, use suitable material for backfill which was removed in the course of making the construction excavations. Do not use frozen material for the backfill and do not place backfill on frozen material. Remove previously frozen material before new backfill is placed. Start backfilling as soon as practicable after the pipes have been laid, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, and proceed until its completion.
- 3.40 With the exception mentioned below in this paragraph, do not backfill trenches at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights, and barricades, and the obstruction of traffic, he may, at his own risk, backfill the entire trench as soon as practicable after installation of pipe, and the related structures have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.
- 3.41 Materials: The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. Both are subject to the approval of the Engineer. Do not place stone or rock fragments larger than 2 inches in greatest dimension in the backfill. Do not drop large masses of backfill material into the trench in such a manner as to endanger the pipe line. Use a timber grillage to break the fall of material dropped from a height of more than 5 feet. Exclude pieces of bituminous pavement from the backfill unless their use is expressly permitted.
- 3.42 Zone Around Pipe: Place bedding material to the level shown on the Drawings and work material carefully around the pipe to ensure that all voids are filled, particularly in bell holes. For backfill up to a level of 2 feet over the top of the pipe, use only selected materials containing no rock, clods or organic materials. Place the backfill and compact thoroughly under the pipe haunches and up to the mid-line of the pipe in layers not exceeding 6 inches in depth. Place each layer and tamp carefully and uniformly so as to eliminate the possibility of lateral displacement. Place and compact the remainder of the zone around the pipe and to a height of one foot above the pipe in layers not exceeding 6 inches and compact to a maximum density of at least 100 percent as determined by ASTM D 698.
- 3.43 Tamping: Deposit and spread backfill materials in uniform, parallel layers not exceeding 12 inches thick before compaction. Tamp each layer before the next layer is placed to obtain a thoroughly compacted mass. Furnish and use, if necessary, an adequate number of power driven tampers, each weighing at least 20 pounds for this purpose. Take care that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers, tractors, or similar powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling and compacting as furnished by the Contractor.

- 3.44 Wet the material by sprinkling, if necessary, to ensure proper compaction by tamping (or rolling). Perform no compaction by tamping (or rolling) when the material is too wet either from rain or applied water to be compacted properly.
- 3.45 Trench Compaction: Compact backfill in pipe trenches to the maximum density as shown on the Drawings, or as listed in the subsection entitled COMPACTION, with a moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve.
- 3.46 Compaction: Control soil compaction during construction providing at least the minimum percentage of density specified for each area classification.
- 3.47 Percentage Of Maximum Density Requirements: After compaction, all fill will be tested in accordance with Method "C" of ASTM D 698, unless specified otherwise. Except as noted otherwise for the zone around pipe, provide not less than the following percentages of maximum density of soil material compacted at optimum moisture content, for the actual density of each layer of soil material-in-place:
- | | |
|-------------------------------------|---------------------------------|
| A. Unpaved Areas: | Compact Full Depth To 92% |
| B. Walkways: | Top 18" - 100%; Remainder-98%. |
| C. Drives And Parking: | Top 18" - 100%; Remainder-98%. |
| D. Trench Backfill (Paved Areas): | Top 18" - 100%; Remainder-98%. |
| E. Trench Backfill (Unpaved Areas): | Compact Full Depth To 92%. |
| F. All Other Backfill: | Top 24"- 100%; Remainder - 95%. |
- 3.48 Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a satisfactory value, as determined by moisture-density relation tests.
- 3.49 Disposal Of Surplus Material: Upon approval of the Engineer, haul all surplus materials not needed or acceptable for backfill and legally dispose of offsite.
- 3.50 Excavation Near Existing Utilities And Structures
- A. Existing Utilities: Attention is directed to the fact that there are pipes, drains, and other utilities in locations adjacent to the proposed work. Where information is available as to the location of existing pipes, drains, and other utilities, the approximate locations have been indicated on the Drawings; however, the completeness or accuracy of the information given is not guaranteed.
 - B. As the excavation approaches pipes, conduits, or other underground structures, discontinue digging by machinery and excavate by means of hand tools, as directed. Such manual excavation, when incidental to normal excavation, is included in the work to be done under items involving normal excavation.
 - C. Where determination of the exact location of a pipe or other underground structure is necessary for doing the work properly, the Contractor may be required to excavate test pits to determine such locations. When such test pits may be properly considered as incidental to other excavation, the work is understood to be included as a part of the excavation.
 - D. Existing Structures: Support and protect from damage all existing pipes, poles, wires, fences, guard rails, curbing, catch basins, manholes, property line markers, and other structures which do not require temporary or permanent relocation.
 - E. Restore or replace damaged items, without compensation, to the condition in which they were found immediately before the work under this project was begun.
 - F. Fences: Remove fences which interfere with the Contractor's operation and (unless otherwise specified) later restore them to a condition at least as good as that in which they were found

immediately before the work was begun, all without additional compensation. Restore fences as promptly as possible and do not leave until the end of the construction period.

- G. Property Markers: Replace property line markers which are disturbed or removed. Have this work performed by a Registered Land Surveyor.
- H. Care And Restoration Of Property: Enclose the trunks of trees which are to remain adjacent to the work with substantial wooden boxes of such height as may be necessary to protect them from piled material, equipment or equipment operation. Use excavating machinery and cranes of suitable type and operate the equipment with care to prevent injury to remaining tree trunks, roots, branches and limbs.
- I. Do not cut branches, limbs, and roots except by permission of the Engineer. Cut smoothly and neatly without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks of trees, neatly trim the cut or injured portions and cover with an application of grafting wax or tree healing paint as directed.
- J. Protect by suitable means all cultivated hedges, shrubs and plants which might be injured by the Contractor's operations. Promptly heel in any such trees or shrubbery necessary to be removed and replanted. Perform heeling in and replanting under the direction of a licensed and experienced nurseryman. Replant in their original position all removed shrubbery and trees after construction operations have been substantially completed and care for until growth is reestablished.
- K. Replace cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, by items of kind and quality at least equal to the kind and quality existing at the start of the work.
- L. Do not operate tractors, bulldozers or other power-operated equipment on paved surfaces if the treads or wheels of the equipment are so shaped as to cut or otherwise injure the surfaces.
- M. Restore all surfaces, including lawns, grassed, and planted areas which have been injured by the Contractor's operations, to a condition at least equal to that in which they were found immediately before the work was begun. Use suitable materials and methods for such restoration. Maintain all restored plantings by cutting, trimming, fertilizing, etc., until acceptance. Restore existing property or structures as promptly as practicable and do not leave until the end of construction period.
- N. Protection Of Streams: Exercise reasonable precaution to prevent the silting of streams. Provide at Contractor's expense temporary erosion and sediment control measures to prevent the silting of streams and existing drainage facilities.

3.51 Erosion Control

- A. General: Exercise precaution to prevent the erosion of disturbed surfaces. Provide temporary erosion and sediment control measures to prevent the silting of existing drainage facilities.
- B. Air Pollution: Comply with all pollution control rules, regulations, ordinances, and statutes which apply to any work performed under the Contract, including any air pollution control rules, regulations, ordinances and statutes, or any municipal regulations pertaining to air pollution.
- C. During the progress of the work, maintain the area of activity, including sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride or more effective dust control, furnish and spread the material, as directed, and without additional compensation.
- D. Bridging Trenches: Provide suitable and safe bridges and other crossings where required for the accommodation of travel; provide access to private property during construction, and remove said structures thereafter.
- E. Bridge or backfill trenches in any portion of the travel lanes of public or private roads, or drives, at the end of each day's operation to provide for safe travel. No additional compensation will be made for this work.

- F. Respreading Topsoil: This work consists of preparing the ground surface for topsoil application and removing topsoil from stockpile and placing and spreading the topsoil on smooth, graded areas in accordance with these Specifications.
- G. Supply topsoil reasonably free from subsoil, clay lumps, stones, or other similar objects larger than 2 inches in greatest diameter, brush, stumps, roots, objectionable weeds or litter, excess acid or alkali, or any other material or substance which may be harmful to plant growth or a hindrance to subsequent smooth grading, planting, and maintenance operations.
- H. Inventory topsoil requirements with the landscape subcontractor. Evaluate amount of topsoil needed and locations needed. Respread topsoil on all excavated areas and areas damaged by the work after coordinating with the landscape subcontractor. Clear the surface of the areas to be topsoiled of all stones larger than 4 inches in greatest dimension and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, and the proper growth of the desired planting. Maintain the grades on the areas to be top-soiled in a true and even condition. Where grades have not been established, smooth grade the area and leave the surface at the prescribed grades in an even and properly compacted condition, which insofar as practical will prevent the formation of low places or pockets where water will stand.
- I. Dump the topsoil in separate piles uniformly distributed in planting and seed areas so that when spread it will give a 4-inch depth of topsoil over the graded area. Leave in place the piles of topsoil on any given area until it has been determined that the requirements of the Specifications have been met and spreading has been authorized by the Engineer. Evenly spread the topsoil over the areas by a blade grader or other equipment. Spread in such a manner that grassing operations can proceed with a minimum of soil preparation or tilling. Correct any irregularities in the surface, resulting from topsoiling or other operations, insofar as practical to prevent the formation of low places and pockets where water will stand. Do not place topsoil when it or the ground surface is frozen, excessively wet, or in a condition otherwise unsatisfactory for preparation of planting surfaces or smooth grading operations.
- J. After the topsoil has been spread and the area smoothed to the specified grades, clear the surface of all stones, roots, other objects larger than 2 inches in greatest diameter, and of all wire, brush or other objects that may interfere with subsequent planting or maintenance operations. Remove promptly any topsoil or other dirt which may be brought upon concrete or pavement as a result of hauling of topsoil.

END OF SECTION 02220

SECTION 02261 – RIP RAP

PART 1 - GENERAL

1.1 Description Of Work: This work consists of installing a protective covering of stone on slopes of embankment, around culvert outlets or inlets, on slopes and bottoms of ditches, around foundations, at such locations as indicated in the Drawings or as directed by the Engineer, for the purpose of preventing scour, erosion, or slipping of embankments. Also included are the filter sheet and gravel layer below the riprap.

1.2 Quality Assurance

A. Referenced Standards: Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise shown or specified.

ASTM C 33-99a Standard Specification for Concrete Aggregates

PART 2 – PRODUCTS

2.1 Materials

A. Filter Sheet:

Fabric		Fabric Requirement
<u>Property</u>	<u>Test Method</u>	<u>Minimum Value</u>
Grab Tensile Strength, lbs.	ASTM D 4632	200
Grab Tensile Elongation, percent	ASTM D 4632	50
Coefficient of Water Permeability,	ASTM D 4491	0.10 cm/sec
Puncture Strength, lbs.	ASTM D 4833*	90
Mullen Burst Strength, psi	ASTM D 3786	360
Apparent Opening Size (AOS)	COE CW 02215	70

U.S. Standard Sieve

*Tension testing machine with ring clamp; Steel ball replaced with a 5/16-inch diameter solid steel cylinder, with flat tip and beveled edges, centered within the ring clamp.

B. Stone: Sound, dense, durable quarry or field stone free of cracks or iron pyrite intrusions, without other structural defects and of such quality that they will not disintegrate on exposure to water or weathering. Use stone suitable in all respects for the purpose intended. At least 20% of the stone pieces excluding spalls shall weigh more than 60 pounds and no more than 20% of the stone pieces, excluding spalls, shall weigh less than 25 pounds.

1. Stone Weight: Maximum: 150 Pounds

2. Stone Size (Except Spalls): Minimum Dimension: 8 Inches

PART 3 – EXECUTION

3.1 Inspection: Inspect slopes or ground surface on which riprap is to be placed. Trim the area to the lines and grades indicated on the Drawings or as directed by the Engineers. Properly compact any earth depressions filled while trimming slopes.

3.2 Installation

A. Filter Sheet: Place filter sheet in a loosely laid condition so that it might conform to any irregularities in the soil when gravel sub-base and riprap are placed upon it. Lap adjoining sheets a minimum of 1 foot.

- B. Rip Rap: Commence placement of riprap in a trench of sufficient depth to allow the surface of the riprap to be blended into the surface of the surrounding ground.
- C. Handle or dump the stone into place so as to produce a compact, well-graded mass with a minimum percentage of voids. Place the material to its full course thickness, measured perpendicular to the slope, in one operation and in such a manner that the slopes will be disturbed as little as possible. Distribute the larger pieces and place the final layer of rock so that there will be no segregated pockets of small pieces or groups of large pieces which would cause large open voids. Rearrange the individual pieces, as required, by mechanical equipment or by hand, to the extent necessary to obtain a reasonably well-graded distribution of sizes as specified. The surface of the completed riprap shall be uniform in appearance, free from humps or depressions.
- D. Unless otherwise noted, provide 8 inch minimum thickness, of completed rip rap, measured perpendicular to the slope. To ensure that the filter sheet is not ruptured, do not drop any stone more than 3 feet.

END OF SECTION 02261

SECTION 02451 – REINFORCED CONCRETE PIPE

PART 1 - GENERAL

- 1.1 Description Of Work: The work includes the installation and testing of all reinforced concrete pipe shown on the Drawings.
- 1.2 Quality Assurance
 - A. Referenced Standards: Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise indicated.
 1. ASTM C 76 Specification for Reinforced Concrete Culvert, Storm Drain Sewer Pipe.
 2. ASTM C 150 Specification for Portland Cement.
 3. ASTM C 443 Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
- 1.3 Manufacturer's Qualifications: Only the products of a manufacturer regularly engaged in the manufacture of pipe used for the conveyance of storm water will be acceptable.
- 1.4 Inspection And Acceptance Of Pipe: Acceptance will be on the basis of plant load-bearing tests, material tests, and inspection of manufactured pipe for visual defects and imperfections. The quality of all materials used in the pipe, the process of manufacture, and the finished pipe shall be subject to inspection by the Engineer. Inspection may be made at the place of manufacture, or on the job site after delivery, or at both places and the pipe shall be subject to rejection at any time on account of failure to meet any of the specification requirements, even though sample pipe units may have been accepted as satisfactory at the place of manufacture. All pipe which is rejected must be immediately removed from the project site by the Contractor.
- 1.5 Submittals
 - A. Shop Drawings; Pipe: Before fabrication, submit for approval drawings showing pipe dimensions, joints, reinforcement and other details.

PART 2 - PRODUCTS

- 2.1 Manufacture Of Pipe: Provide new pipe complying with ASTM C 76, and with the additional requirements specified herein. Unless otherwise noted on the Drawings, provide Class III pipe with Wall B. Provide pipe with an interior surface which is free from roughness, projections, indentations, offsets or irregularities of any kind.
- 2.2 Pipe Lengths: Provide pipe in nominal 4 foot lengths. Shorter lengths may be used where required by Construction details or when approved by the Engineer.
- 2.3 Lift Holes: Lift holes will not be permitted in pipe.
- 2.4 Reinforcement: Reinforce pipe in accordance with ASTM C 76.
- 2.5 Cement: Use Type I cement conforming to ASTM C 150.
- 2.6 Admixtures: Do not use admixtures without prior written approval of the Engineer.
- 2.7 Curing: Steam cure pipe in accordance with ASTM C 76.
- 2.8 Repairs: Pipe may be repaired, if necessary, because of occasional minor imperfections in manufacture or accidental injury during handling and will be acceptable if, in the opinion of the Engineer, the repairs are sound, properly finished and cured, and the repaired pipe conforms to the requirements of ASTM C 76. Use mortar for repairs which has a compressive strength of 6,000 psi at the end of 28 days.
- 2.9 Marking: Mark all pipe in accordance with ASTM C 76; no pipe will be accepted unless these markings appear on all pipe.

- 2.10 Jointing: Use rubber gaskets for flexible watertight joints. Conform to ASTM C 443.
- 2.11 Adapters: Provide flexible coupling adapters for connecting reinforced concrete pipe to pipe of other materials. Provide adapters equal to the 1000 Series as manufactured by Fernco and distributed by Jones Manufacturing Co., Inc., Birmingham, AL.

PART 3 – EXECUTION

- 3.1 Inspection: Examine the areas and conditions under which the pipe is to be installed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- 3.2 Excavation: Excavate trenches in accordance with Section 02220, EXCAVATION AND BACKFILL.
- 3.3 Pipe Handling: Transport pipe to the job site and handle in such a manner as not to damage the pipe.
- 3.4 Stockpiling: Stockpile within the rights-of-way so that no dangerous conditions will exist to life or property. Store pipe so that damage to surfaces and/or structures will be prevented. Provide suitable devices to support pipe when it is lifted.
- 3.5 Pipe Installation: Adhere to the rules, regulations and requirements of OSHA, Occupational Safety and Health Act.
- 3.6 Precautions: Lay pipe in dry trenches only. Keep all trenches completely free of water during bedding, laying and jointing of pipe. Dewater and use sheeting where required by field conditions. Pump or drain all water away from the work and dispose of in a suitable manner so that no damage occurs outside the construction easement. Do not permit water to rise in an unbackfilled trench after pipe has been placed. Promptly repair any damage within the construction easement.
- 3.7 Tolerances: Unless otherwise directed by the Engineer in writing, lay all pipe straight between changes in alignment and at uniform grade between change in grade. When jointed in the trench, the pipe shall form a true and smooth line.
- 3.8 Pipe Lengths: Lay pipe in nominal 4 foot lengths; except the joints adjacent to any manhole which is not cast integrally with the horizontal conduit shall have a maximum length of 2 feet.
- 3.9 Placing Pipe In Trench: After delivery alongside the trench, visually inspect each length of pipe for damaged surfaces, breakage and conformance to specifications.
- 3.10 Pipe may be marked with paint or other permanent marking material so that the marks are plainly visible after installation in the trench and before the pipe is covered. Reject, stockpile, and remove from the site all pipe not conforming to specifications.
- 3.11 Where no other bedding is indicated, place pipe on a shaped bed of undisturbed material. Before pipe is placed on the bedding material, excavate suitable bell holes so that after placement of the pipe, only the barrel receives bearing pressure from the supporting material. Support the entire length of the unit.
- 3.12 Place pipe into its position in the trench in such manner and by such means as approved by the Engineer. Furnish approved devices to support all parts of the pipe unit when it is lifted. Protect pipe during handling against impact shocks and free falls. Do not permit hooks to come in contact with pre-moulded joint surfaces. Lower pipe into position in the trench and joint without disturbing the bedding or adjoining section of pipe.
- 3.13 Handle pipe having premoulded joint rings or attached couplings so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material. Take care to avoid dragging the spigot ring on the ground or allowing it to be damaged by contact with gravel, crushed stone, or other hard objects. Do not subject the bell and spigot sections to direct stress of any kind except that required to effect the jointing.
- 3.14 Pipe Laying: Unless otherwise shown on the Drawings, lay all pipe in open trench construction. Start laying pipe at the lowest point and install the pipe so that the spigot end points in the direction of flow. Lay pipe to conform to the lines and grades indicated on the Drawings, unless otherwise directed by the Engineer in writing.

- 3.15 Clean all joint surfaces after the pipe units are aligned in the trench and are ready to be joined. Immediately before jointing the pipe, lubricate the bell or groove in accordance with the manufacturer's recommendations. Then carefully push pipe unit into place without damage to the pipe or gasket. Use suitable devices to force the pipe together so that they will fit with a minimum open recess inside or outside and so that they will have tightly sealed joints. Lay each pipe unit to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.
- 3.16 Immediately after the pipe units are put together, inspect the position of the gasket in the joint using an approved feeler gauge to make sure it is properly positioned. Pull apart and remake all joints, using new gaskets, if the gasket has become damaged or improperly positioned.
- 3.17 Make all joints in accordance with manufacturer's recommendations which are subject to approval by the Engineer. Prior to backfill, fill bell holes with bedding materials and compact so that the spigot will not move in the bell of the adjoining pipe under backfill load. Do not permanently support pipe on saddles, blocking or boulders.
- 3.18 Temporary Plugs: At all times when pipe laying is not actually in progress, close the open end of pipe by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, do not remove the plug until all danger of earth or other material entering the pipe has passed.
- 3.19 Stoppers: Close open ends of pipe or fittings to be used for future connections as shown on the Drawings.
- 3.20 Backfill: When pipe has been properly bedded and all joints have been grouted, backfill trenches in accordance with Section 02220, EXCAVATION AND BACKFILL.
- 3.21 Clean Up: Follow backfill, as closely as conditions will allow, with clean up operations.
- 3.22 Prior to final acceptance, clean interior of all pipe of debris and silting.

END OF SECTION 02451

SECTION 02510 – STONE BASE COURSE

PART 1 - GENERAL

- 1.1 This Section includes provisions for stone base course over prepared sub-base and primed with bituminous material. The stone base course shall comply with the 2007 Edition of the SCDOT Standard Specifications for Highway Construction, Edition of 2007.
- 1.2 Submittals: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

PART 2 – PRODUCTS

- 2.1 Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.
- 2.2 Grade Control: Establish and maintain required lines and elevations.
- 2.3 Materials: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.
 - A. Coarse Aggregate: Coarse aggregate (material retained on No. 4 sieve) shall consist of hard, durable particles of stone and shall be reasonably free from thin and elongated pieces, disintegrated particles, vegetable or other deleterious substances. Gravel shall contain at least 50 percent, by weight, of particles having at least one fractured face. When subjected to the Los Angeles Abrasion Test (AASHTO T-96), the coarse aggregate shall have an abrasion loss of not more than 65 percent.
 - B. Fine Aggregate: Fine aggregate (passing No. 4 sieve) shall consist of material produced by crushing operations. The liquid index shall not exceed 25 and the plastic index shall not exceed 6 when tested in accordance with AASHTO T-89 and T-90, respectively.
 - C. Composite Mixture: Composite mixture shall be free from vegetable matter, lumps or balls of clay, and other deleterious substances. The composite mixture can be produced in one crushing operation or by blending the coarse and fine aggregates in proper proportions. The composite mixture shall meet the following requirements:

Sieve	Percent by
<u>Designation</u>	<u>Weight Passing</u>
2"	100
1-1/2"	95-100
1"	70-100
1/2"	48-75
No. 4	30-50
No. 30	11-30
No. 200	0-12
Liquid Limit	25 Maximum
Plasticity Index	6 Maximum

- D. Provide other stone base as specified on the plans for a proper installation of the pervious pavement.

PART 3 – EXECUTION

- 3.1 Surface Preparation: Remove loose material from compacted sub-base surface immediately before applying herbicide treatment or prime coat.
- 3.2 Proof-roll prepared sub-base surface to check for unstable areas and areas requiring additional compaction.

- 3.3 Notify Engineer of unsatisfactory conditions. Do not install stone base course until deficient sub-base areas have been corrected.
- 3.4 Placement of Base Course: Material shall be placed on the prepared sub-base in such a manner that the finished base will conform to the lines, grades and required thickness. Where the required thickness is 8" or less, the base may be constructed in one layer. Where the required compacted thickness is more than 8", the base course shall be constructed in two or more layers of approximately equal thickness, the maximum compacted thickness of any one layer not to exceed 8". Each layer shall be compacted as specified herein before the succeeding layer is placed.
- 3.5 Compaction of Base Course: The compaction of the base course shall be achieved using the proper equipment. Compaction of the base course shall be continued until a density of 95 percent of Modified Proctor density is achieved unless otherwise specified on the drawings. Take care not to compact the subgrade under the pervious concrete areas beyond in situ compaction. Should the sub-grade become unstable after the base course has been placed, the affected section shall be repaired by removing the base course material, the unsatisfactory sub-grade material and replacing the sub-grade material with suitable material and re-compacting and reshaping the sub-grade to the required cross-section, grade and required compaction.
- 3.6 Tolerance In Thickness of Base: The thickness of the completed base course shall be measured at intervals not exceeding one per 5000 square feet. Where the base course is deficient by ½" or more, the Contractor shall correct such areas by scarifying, adding base material and re-compacting to the required density.
- 3.7 Application of Prime Coat: Bituminous prime material shall not be applied until all irregularities in the base course have been repaired and seasoned nor shall prime be applied until the density of the base has been approved by the Engineer. The base shall be cleaned of all mud, dirt, dust and caked or loose material of any description by brooming, blowing or other methods so as to expose the coarse aggregate in the base course. The base shall be dry before prime is applied.
- 3.8 The rate of application of the prime shall be from 0.25 to 0.30 gallons per square yard.
- 3.9 Maintenance: The Contractor is required to machine the base course as often as is necessary to maintain it smooth and true to grade, and to prevent raveling by application of water as may be required to keep the base tightly bound until prime is applied. Defects which develop shall be repaired.

END OF SECTION 02510

SECTION 02511 - HOT-MIXED ASPHALT PAVING

PART 1 - GENERAL

- 1.1 This Section includes provisions for Type C hot-mixed asphalt paving over prepared sub-base.
- 1.2 Proof rolling of prepared sub-base is included in this Section.
- 1.3 Submittals: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - A. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.
- 1.4 Site Conditions
 - A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
 - B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg F (4 deg C) and when base is dry. Base course may be placed when air temperature is above 30 deg F (minus 1 deg C) and rising.

PART 2 – PRODUCTS

- 2.1 Grade Control: Establish and maintain required lines and elevations.
- 2.2 Materials: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.
 - A. Coarse Aggregate: Sound, angular crushed stone, or crushed gravel.
 - B. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone.
 - C. Asphalt Cement: ASTM D 3381 for viscosity-graded material; ASTM D 946 for penetration-graded material.
 - D. Prime Coat: Cut-back asphalt type, ASTM D 2027; MC-30, MC-70 or MC-250.
- 2.3 Herbicide Treatment: Commercial chemical for weed control, registered and approved for this use by Environmental Protection Agency. Provide granular, liquid, or wettable powder form.
- 2.4 Pavement Marking Paint: Alkyd-resin type, ready-mixed complying with AASHTO M 248, Type I.

Colors Required:	White. (for parking)
	Yellow. (for no parking)
	Blue (for handicapped)
- 2.5 Wheel Stops: 2,500-psi compressive strength precast, air-entrained concrete, approximately 5 inches high, 8 inches wide, and 7 feet long. Provide chamfered corners and drainage slots on underside.
- 2.6 Asphalt-Aggregate Mixture: Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with ASTM D 3515 and as recommended by local paving authorities to suit project conditions.

PART 3 – EXECUTION

- 3.1 Surface Preparation: Remove loose material from compacted sub-base surface immediately before applying herbicide treatment or prime coat.
- 3.2 Proof-roll prepared sub-base surface to check for unstable areas and areas requiring additional compaction.
- 3.3 Notify Architect of unsatisfactory conditions. Do not begin paving work until deficient sub-base areas have been corrected and are ready to receive paving.

- 3.4 Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry sub-base prior to application of prime coat.
- 3.5 Prime Coat: Apply at rate of 0.25 to 0.30 gal. per sq. yd., over compacted sub-grade. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile. Allow to dry until at proper condition to receive paving.
- 3.6 Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and/or clean damaged surfaces.
- 3.7 Placing Mix: Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225 deg F. Place areas inaccessible to equipment by hand. Place each course to required grade, cross-section, and compacted thickness.
- 3.8 Paver Placing: Place in strips not less than 10 feet wide, unless otherwise acceptable to Architect/Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.
- 3.9 Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.
- 3.10 Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.
- 3.11 Rolling: Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
 - A. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.
 - B. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been evenly compacted.
 - C. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained 95 percent laboratory density.
- 3.12 Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot hot-mixed asphalt. Compact by rolling to specified surface density and smoothness.
- 3.13 Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- 3.14 Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.
- 3.15 Cleaning: Sweep and clean surface to eliminate loose material and dust.
- 3.16 Striping: Use chlorinated-rubber base traffic lane-marking paint, factory-mixed, quick-drying, and non-bleeding. Do not apply traffic and lane marking paint until layout and placement have been verified with Architect/Engineer. Apply paint with mechanical equipment to produce uniform straight edges. Apply at manufacturer's recommended rates to provide minimum 12 to 15 mils dry thickness.
- 3.17 Wheel Stops: Secure wheel stops to hot-mixed asphalt surface with not less than two 3/4-inch-diameter galvanized steel dowels embedded in pre-cast concrete at 1/3 points. Size length of dowel to penetrate at least 1/2 hot-mixed asphalt depth or 2", whichever is greater.

- 3.18 Field Quality Control: Testing in-place hot-mixed asphalt courses for compliance with requirements for thickness and surface smoothness will be done by the Architect's testing laboratory.
- 3.19 Repair or remove and replace unacceptable paving as directed by Architect/Engineer.
- 3.20 Thickness: In-place compacted thickness tested in accordance with ASTM D 3549 will not be acceptable if exceeding following allowable variations:
 - A. Base Course: Plus or minus 1/2 inch.
 - B. Surface Course: Plus or minus 1/4 inch.
- 3.21 Surface Smoothness - Texture: Finished surface shall be smooth and free from irregularities in texture such as voids, honeycombs and exposed coarse aggregate to provide a consistently smooth and blemish free appearance. Only closed surface pavement will be accepted. Ponding will not be accepted.
- 3.22 Surface Smoothness: Test finished surface of each hot-mixed asphalt course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:
 - A. Base Course Surface: 1/4 inch.
 - B. Wearing Course Surface: 3/16 inch.
- 3.23 Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

END OF SECTION 02511

SECTION 02520 - PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

- 1.1 This Section includes exterior portland cement concrete paving for the following:
 - A. Parking apron/loading dock.
 - B. Curbs and gutters.
 - C. Walkways.
- 1.2 Submittals:
 - A. Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- 1.3 Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, joint systems, curing compounds, dry-shake finish materials, and others if requested by Engineer.
- 1.4 Design mixes for each class of concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- 1.5 Laboratory test reports for evaluation of concrete materials and mix design tests.
- 1.6 Quality Assurance
 - A. Concrete Standards: Comply with provisions of the following standards, except where more stringent requirements are indicated.
 1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings"
 2. ACI 318, "Building Code Requirements for Reinforced Concrete"
 3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice"
 - B. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.
 - C. Concrete Testing Service: Utilize the Architect's testing agency to perform materials evaluation tests and to design concrete mixes.

PART 2 – PRODUCTS

- 2.1 Forms
 - A. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 - B. Use flexible or curved forms for curves of a 100-foot or less radius.
 - C. Form Release Agent: Use water, vegetable or soy based form release agent containing low or no volatile organic compounds (VOC) in lieu of petroleum based form release agents.
- 2.2 Reinforcing Materials
 - A. Reinforcing Bars and Tie Bars: ASTM A615, Grade 60, deformed.
 - B. Welded Steel Wire Fabric: ASTM A185, furnished in flat sheets, not rolls, unless otherwise acceptable to Architect/Engineer.
 - C. Joint Dowel Bars: Plain steel bars, ASTM A615, Grade 60. Cut bars true to length with ends square and free of burrs.

- D. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Use wire bar-type supports complying with CRSI specifications.
- E. Use supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 Concrete Materials

- A. Portland Cement: ASTM C150, Type I, use one brand of cement throughout Project unless otherwise acceptable to Architect/Engineer.
- B. Fly Ash: ASTM C618, Type F.
- C. Normal-Weight Aggregates: ASTM C33, Class 4, and as follows. Provide aggregates from a single source.
- D. Maximum Aggregate Size: 1-1/2 inches, do not use fine or coarse aggregates that contain substances that cause spalling.
- E. Local aggregates not complying with ASTM C33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect/Engineer.

2.4 Water: Potable.

- A. Admixtures: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- B. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
- C. Water-Reducing Admixture: ASTM C494, Type A.
- D. High-Range Water-Reducing Admixture: ASTM C494, Type F or Type G.
- E. Water-Reducing and Accelerating Admixture: ASTM C494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C494, Type D.
- G. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Air-Entraining Admixture: Darex AEA or Daravair; W.R. Grace & Co.
MB-VR or Micro-Air; Master Builders, Inc.
Sika AER; Sika Corp.
 - 2. Water-Reducing Admixture: WRDA; W.R. Grace & Co.
Pozzolith Normal or Polyheed; Master Builders, Inc.
Plastocrete 161; Sika Corp.
 - 3. High-Range Water-Reducing Admixture: WRDA 19 or Daracem; W.R. Grace & Co.
Rheobuild or Polyheed; Master Builders, Inc.
Sikament 300; Sika Corp.
 - 4. Water-Reducing and Accelerating Admixture: Daraset; W.R. Grace & Co.
Pozzutec 20; Master Builders, Inc.
 - 5. Water-Reducing and Retarding Admixture: Daratard-17; W.R. Grace & Co.
Pozzolith R; Master Builders, Inc.
Plastiment; Sika Corporation.

2.5 Curing Materials

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C171.

1. Waterproof paper.
 2. Polyethylene film.
 3. White burlap-polyethylene sheet.
- C. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: ASTM C309, Type I, Class A or B, wax free.
- D. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.
- E. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
- F. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound:
1. Masterkure; Master Builders, Inc.
 2. Kure-N-Seal; Sonneborn-Chemrex.
 3. Horn Clear Seal; Tamms/A.C. Horn.
- G. Clear Waterborne Membrane-Forming Curing Compound:
1. Masterkure 100W; Master Builders, Inc.
 2. Kure-N-Seal WB; Sonneborn-Chemrex.
 3. Horncure 100; Tamms/A.C. Horn.
- H. Evaporation Control: Confilm; Master Builders, Inc., or approved equal.

2.6 Related Materials

- A. Bonding Agent: Acrylic or styrene butadiene.
- B. Epoxy Adhesive: ASTM C881, two-component material suitable for dry or damp surfaces. Provide material type, grade, and class to suit requirements.
- C. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
1. Bonding Agent: Daraweld C; W.R. Grace & Co.
Acryl-Set; Master Builders Inc.
Sonocrete; Sonneborn-Chemrex.
 2. Epoxy Adhesive: Concrecive Standard Liquid; Master Builders, Inc.
Sikadur 32 Hi-Mod; Sika Corp.
Epoxitite Binder 2390; Tamms/A.C. Horn, Inc.

PART 3 – EXECUTION

3.1 Concrete Mix

- A. Prepare design mixes for each type and strength of normal-weight concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use the Owner's testing agency for preparing and reporting proposed mix designs.
- B. Use only Owner's field quality-control testing agency as the independent testing agency.
- C. Limit use of fly ash to 25 percent of cement content by weight.
- D. Proportion mixes according to ACI 211.1 and ACI 301 to provide normal-weight concrete with the following properties:
- Compressive Strength (28-Day): 3500 psi: Loading Area Aprons

Compressive Strength (28-Day): 3000 psi: Curb & Curb, Walkways

- E. Maximum Water-Cement Ratio at Point of Placement: 0.45.
- F. Slump Limit at Point of Placement: 3 inches.
- G. Slump limit for concrete containing high-range water-reducing admixture (super plasticizer): Not more than 8 inches after adding admixture to site-verified 2 -to-3-inch slump concrete.
- H. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of plus or minus 1- 1/2 percent:
Air Content: 5.5 percent for 1-1/2-inch maximum aggregate.

3.2 Pervious Concrete Mix

- A. Prepare pervious concrete mix in accordance with all manufacturers recommendations and standards. Submit product data for approval.

3.3 Concrete Mixing

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C94.
- B. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- C. Surface Preparation: Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- D. Remove loose material from compacted subbase surface immediately before placing concrete.
- E. Edge Forms And Screed Construction: Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement. Check completed formwork and screeds for grade and alignment to following tolerances:
 - 1. Top of Forms: Not more than 1/8 inch in 10 feet.
 - 2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.
- F. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.
- G. Placing Reinforcement: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement.
- H. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- I. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- J. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- K. Joints: Construct contraction, construction, and isolation joints true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise.
- L. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as shown on Drawings. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:

- M. **Tooled Joints:** Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.
- N. **Sawed Joints:** Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into hardened concrete when cutting action will not tear, abrade, or otherwise damage surface and before development of random contraction cracks.
- O. **Inserts:** Form contraction joints by inserting premolded recycled rubber expansion joint (equal to ASTM D1752) strips into fresh concrete until top surface of strip is flush with paving surface. Radius each joint edge with a jointer tool. Carefully remove strips or caps of two-piece assemblies after concrete has hardened. Clean groove of loose debris.
- P. **Construction Joints:** Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.
- Q. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
- R. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- S. **Isolation Joints:** Form isolation joints of Recycled Rubber Expansion Joint equal to ASTM D1752 abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
- T. Locate expansion joints at intervals of 50 feet, unless indicated otherwise.
- U. Extend joint fillers full width and depth of joint, not less than 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
- V. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
- W. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- X. **Joint Schedule:** **Expansion:** Every 50 feet for walkways
 Contraction: Every 10 feet for walkways unless indicated on drawings
 Every 20 feet for loading aprons unless indicated on drawings

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcing before placing concrete. Do not place concrete on surfaces that are frozen.
- C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete.
- E. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- F. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.

- G. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- H. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309R.
- I. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcing, dowels, and joint devices.
- J. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.
- K. Curbs And Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete.
- L. Cold-Weather Placement: Comply with provisions of ACI 306R and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- M. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
- N. Do not use frozen materials or materials containing ice or snow.
- O. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- P. Hot-Weather Placement: Place concrete complying with ACI 305R and as specified when hot weather conditions exist.
- Q. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F. Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
- R. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
- S. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.
- T. Do not overcompact areas to receive pervious concrete beyond in situ compaction.

3.4 Concrete Finishing:

- A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiform granular texture.
- B. Burlap Finish: Drag a seamless strip of damp burlap across concrete, perpendicular to line of traffic, to provide a uniform gritty texture finish.
- C. Medium-To-Fine-Textured Broom Finish: Draw a soft bristle broom across concrete surface perpendicular to line of traffic to provide a uniform fine line texture finish.
- D. Medium-To-Coarse-Textured Broom Finish: Provide a coarse finish by striating surface 1/16 inch to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

- E. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.
Radius: 1/4 inch.
- F. Concrete Protection And Curing: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 306R for cold weather protection and ACI 305R for hot weather protection during curing.
- G. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- H. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- I. Curing Methods: Cure concrete by moisture curing, moisture- retaining-cover curing, curing compound, or a combination of these as follows:
- J. Moisture Curing: Keep surfaces continuously moist for not less than 7 days with the following materials:
- K. Water: Continuous water-fog spray. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with a 12-inch lap over adjacent absorptive covers.
- L. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- M. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
- N. Field Quality Control Testing: Utilize the Architect's testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. The Contractor will utilize the Architect's testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include the following:
- O. Sampling Fresh Concrete: ASTM C172, except modified for slump to comply with ASTM C94.
- P. Slump: ASTM C143; one test at point of placement for each compressive-strength test but no less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
- Q. Air Content: ASTM C231, pressure method; one test for each compressive-strength test but no less than one test for each day's pour of each type of air-entrained concrete.
- R. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F (4 deg.C) and below and when 80 deg F (27 deg.C) and above, and one test for each set of compressive-strength specimens.
- S. Compression Test Specimens: ASTM C31; one set of four standard cylinders for each compressive-strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
- T. Compressive-Strength Tests: ASTM C39; one set for each day's pour of each concrete class exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. Test one specimen at 7 days, test two specimens at 28 days, and retain one specimen in reserve for later testing if required.

- U. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
- V. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
- W. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
- X. Test results will be reported in writing to Architect/Engineer, concrete manufacturer, and Contractor.
- Y. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
- Z. Additional Tests: The testing agency will make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Architect/Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Testing of materials not in compliance with project requirements will be at the expense of the Contractor.
- AA. Repairs And Protection: Remove and replace concrete paving that is broken, damaged, or defective, or does not meet the requirements of this Section.
- BB. Drill test cores where directed by Architect/Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to paving with epoxy adhesive.
- CC. Protect concrete from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- DD. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

END OF SECTION 02520

SECTION 02567 - CATCH BASINS

PART 1 - GENERAL

- 1.1 Description Of Work: This work includes the construction of all catch basins shown on the Drawings or as specified herein.
- 1.2 Quality Assurance
- A. Referenced Standards: Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards.
1. ASTM A 48 Standard Specification for Gray Iron Castings
 2. ASTM A 536 Standard Specification for Ductile Iron Castings
 3. ASTM C 32 Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale)
 4. ASTM C 144 Standard Specification for Aggregate for Masonry Mortar
 5. ASTM C 150-99a Standard Specification for Portland Cement
 6. ASTM C 207-91 Standard Specification for Hydrated Lime for Masonry Purposes
 7. ASTM C 270-00 Standard Specification for Mortar for Unit Masonry
 8. ASTM C 361 Standard Specification for Reinforced Concrete Low-Head Pressure Pipe
 9. ASTM C 478 Standard Specification for Precast Reinforced Concrete Manhole Sections
- 1.3 Submittals:
- A. Submit for approval shop drawings for catch basin frames, covers, grates, and steps. Submit for approval shop drawings for each type precast catch basin section.

PART 2 – PRODUCTS

- 2.1 Material: Unless otherwise noted on the Drawings, the Contractor has the option of providing catch basins constructed of brick or precast concrete.
- A. Catch Basin Bases, Cast-In-Place: Conform to the requirements of Section 03300 Cast-In-Place Concrete.
- B. Catch Basin Bases, Precast Concrete: Conform to the requirements of ASTM C 478.
- C. Catch Basin Sections, Precast Concrete: Precast concrete catch basin consists of a base section, riser sections, a transition and top. Provide pipe openings, of suitable size to fit the pipe, in the base section or riser sections as required. Conform to the requirements of ASTM C 478.
- D. Acceptance of the sections will be on the basis of material tests and inspection of the completed project.
- E. Catch Basin Steps, Cast Iron: Unless otherwise noted on the Drawings, provide the following cast iron steps conforming to the requirements of ASTM A 48:
1. Precast Concrete Catch Basin: Neenah Foundry R-1981-K, Sumter Machinery Co. Step No. 7, or equal.
 2. Brick Catch Basin: Neenah Foundry R-1980-J, Sumter Machinery Co. Step No. 9, or equal.
- F. Riser Joints: Provide riser joints of the rubber gasket type in which the gaskets are in compression and which will permit both longitudinal and angular movement. Design the bell and spigot ends to confine the gasket when the joint is in its final position. Provide each section with proper ends made of concrete formed on machined rings to insure accurate joint surfaces. The diameters of the joint surface, depended upon to compress the gasket, shall not vary from the theoretical diameters by more than 1/16 inch. Seal the joint with a rubber gasket so that the joint will remain tight under all

conditions of service. Joints must be capable of withstanding an internal hydrostatic pressure of 10 psi. with no visible signs of leakage.

- G. Gaskets: Provide gaskets which conform to applicable sections of ASTM C 361. Use gaskets of a special rubber composition having a texture to assure a watertight and permanent seal and the product of a manufacturer having at least 5 years experience in the manufacture of rubber gaskets for pipe joints. Provide gaskets which are a continuous ring of flexible joint rubber of a composition and texture which are resistant to common ingredients of sewage, industrial wastes, and ground-water and which will endure permanently under the conditions likely to be imposed by this service.
- H. Frames, Covers, And Grates: Provide gray cast or ductile iron castings conforming to ASTM A 48 or ASTM A 536, respectively. Use castings for the catch basin frames, covers, and grates which are of good quality, strong, tough, even grained cast-iron, smooth, free from scale, lumps, blisters, sandholes and defects of every nature which would render them unfit for the service for which they are intended. Either machine horizontal bearing surfaces to true surfaces to prevent rocking or provide an approved non-rocking device.
- I. Clean all castings thoroughly by shot blasting or some other approved method to provide an equal surface. Before shipping from the foundry, give castings one coat of coal-tar-pitch varnish, applied in a satisfactory manner so as to make a smooth coating which is tough, tenacious and not brittle or with any tendency to scale off. Castings may be subjected to a water-tight hammer test by the Engineer.
- J. Provide catch basin frames, covers, and grates designed to withstand a traffic wheel loading of 16,000 pounds/axle in accordance with current AASHTO specifications.
- K. Brick: Unless otherwise noted, provide standard size brick (8 inches long x 2-1/4 inches high x 3-5/8 inches wide), Grade SM, conforming to the requirements of ASTM C 32 except that the mean of 5 absorption tests must not exceed 8 percent by weight. Use brick which are sound, hard, uniformly burned, regular and uniform in shape and texture, and free of chips, cracks and other defects that impair strength or usefulness.
- L. Portland Cement: ASTM C 150, Type II. Use Type III high-early-strength as required for laying masonry in cold weather.
- M. Hydrated Lime: ASTM C 207, Type S.
- N. Aggregates: ASTM C 144 graded with 100% passing the No. 16 sieve.
- O. Water: Clean, free of deleterious materials which would impair strength or bond.
- P. Admixtures: Anti-freeze and accelerating compounds will not be allowed.

PART 3 – EXECUTION

- 3.1 Inspection: Examine the areas and conditions under which catch basins will be installed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- 3.2 Bases: Catch basin bases may be precast or cast-in-place as indicated on the Drawings. Invert channels may be formed in the concrete of the base or may be formed of brick and mortar upon the base. Insure that inverts conform accurately to the size of the adjoining pipes.
- 3.3 Curve side inverts and lay out main inverts (where direction changes) in smooth curves of the longest possible radii which are tangent to the side walls of the adjoining sewers at the plane midway between the invert and crown.
- 3.4 Frames, Covers, And Grates: Set catch basin frames with the tops conforming accurately to the grade of the pavement or finished ground surface or as indicated on the Drawings or as directed. Set frames concentric with the top of the masonry and in a full bed of mortar so that the space between the top of the catch basin masonry and the bottom flange of the frame shall be completely filled with mortar and made watertight. Place a thick ring of mortar extending to the outer edge of the masonry all around the

bottom flange. Finish the mortar flush with the top of the flange and with a slight slope to shed water away from the frame.

- 3.5 Leave catch basin covers or grates in place in the frames on completion of other work at the catch basin.

- 3.6 Stub Outs For Future Lines: Where stub outs are shown on the Drawings to indicate future lines, stub out short lengths (2 feet to 4 feet) of the bell end of pipe as directed by the Engineer. Use pipe of same type as used for other pipe entering the catch basin unless directed otherwise. Accurately set the stub to the required line and elevation and encase the line in the catch basin wall. Close the open end of the pipe with a stopper sealed in with plastic joint compound.

3.7 Precast Catch Basins

- A. Precast Catch Basin Sections: Handle and install each section in such a manner and by such means as to prevent damage. Set sections vertical with sections and steps in true alignment.
- B. Install base sections on firm stabilized foundation so prepared to prevent settlement and misalignment. Place pipe openings at the exact elevation and location to receive entering pipes.
- C. Install riser sections, transitions and tops level and plumb with catch basin steps in true alignment. Make joints in accordance with manufacturer's instructions.
- D. After entering pipes are placed in the pipe openings and set to true alignment and grade, fill the annular space between the pipe and opening with a non-shrink grout to seal the joint watertight.
- E. Lift holes will be allowed in precast catch basin sections. After setting sections in place, thoroughly plug all holes in sections with mortar. Make mortar one part cement to 1-1/2 parts sand; mix with water until slightly damp to the touch (just short of balling) and hammer mortar into the holes until it is dense and an excess of paste appears on the surface. Then finish smooth and flush with the adjoining surfaces.

3.8 Brick Catch Basins

- A. Mortar: Comply with the requirements of ASTM C 270. Unless directed otherwise by the Engineer, mix mortar in the following proportions (by volume):

1 part	Portland Cement
1/2 part	Hydrated Lime
4-1/2 parts	Sand

- B. Laying Brick: Use only clean brick. Moisten as directed until bricks are neither so dry as to absorb water from the mortar, nor so wet as to be slippery when laid. Lay each brick in a full bed of mortar without requiring subsequent grouting, flushing, or filling.
 - C. Lay brick in level courses with mortar joints approximately 1/2" wide and uniform in thickness. Tool exposed joints and strike flush joints which will be plastered.
 - D. Set entering pipe as the work progresses. Completely fill the space between the pipe and masonry to insure a watertight seal.
- 3.9 Build steps into the catch basin and align so as to form a continuous ladder with the steps equally spaced vertically at not more than 16 inches on center. Embed steps into the wall a minimum of 3 inches and allow each step to project a minimum of 4 inches from the wall measured from the point of embedment.
- 3.10 Plastering And Curing Brick: Plaster outside face of masonry with mortar 1/2 inch thick. If required, moisten masonry prior to application of plaster. Carefully spread and trowel the plaster so that all cracks are thoroughly worked out. After hardening, check the plaster for bond and soundness by tapping. Remove and replace any unbonded or unsound plaster.
- 3.11 Protection: Do not allow masonry and plaster to dry out rapidly; keep moist with burlap or other approved means. Protect masonry from weather and frost as required.

END OF SECTION 02567

SECTION 02720 – PAINTED TRAFFIC MARKINGS

PART 1 - GENERAL

1.1 Description Of Work

- A. The WORK under this Section includes providing all labor, materials, tools and equipment necessary for furnishing and placing painted traffic markings as shown on the Drawings.
- B. Details not shown on the Drawings shall be in conformity with the latest editions of the Manual of Uniform Traffic Control Devices (MUTCD), South Carolina Department of Transportation (SCDOT), Americans with Disabilities Act (ADA) and the International Fire Code (IFC).
- C. This WORK shall also include re-striping all paint markings to their original conditions, if damaged by the CONTRACTOR's operations.

PART 2 - PRODUCTS

2.1 Material

- A. White and yellow traffic marking paint shall be methyl methacrylate and conform to AASHTO M 248, Type F.
- B. Blue marking paint shall match CBJ Street Department disability blue marking paint.
- C. Glass spheres for reflectorizing traffic paint shall conform to AASHTO M 247, Type I, and shall be supplied by a moisture resistant coating.

PART 3 - EXECUTION

3.1 General

- A. Lines shall be applied as solid, dashed or dotted stripes, either singly or in combination, as shown on the Drawings. Dashed lines shall be applied in a 40 foot cycle consisting of a ten foot dash and a 30 foot gap between dashes, unless otherwise shown on the Drawings. The CONTRACTOR shall use an accurate dashing mechanism, which is capable of being easily adjusted to retrace existing dashed markings or to apply new materials at the correct spacing. Dashed lines which are to be applied over plainly visible existing dashed lines shall begin within six inches of the beginning of the existing dash, unless otherwise directed by the ENGINEER.
- B. Gaps not marked as a result of template use for spray-applied auxiliary markings shall be filled with marking material after template removal.
- C. Pavement markings shall be free of uneven edges, overspray, or other readily visible defects which detract from the appearance or function of the pavement markings.
- D. Lines shall be sharp, well defined, and uniformly retroreflective. The width of the applied shall be the width specified plus or minus ¼-inch. Fuzzy lines, excessive overspray, or non-uniform applications are unacceptable. Lines shall be inspected at night by the ENGINEER to verify effective light reflection. Pavement markings which are improperly applied, located, or reflectorized shall be corrected. Lines applied with insufficient material quantities shall be properly reapplied. Improperly located lines shall be removed. New lines shall then be applied in the correct locations at the CONTRACTOR's expense, including the furnishing of approved materials.
- E. Methods and equipment used for pavement preparation, marking removal shall be subject to the approval of the ENGINEER. Glass beads shall be kept dry during storage and prior to use.
- F. Other construction WORK, such as shoulder paving, topsoil placement and grading, and seeding, shall be scheduled and performed in a manner to avoid damage to applied pavement markings.
- G. Pavement marking materials shall not be applied to the reflector of a recessed pavement marker. The CONTRACTOR shall interrupt the application of the pavement marking line at each recessed pavement marker where marking material would otherwise be applied to the

marker prismatic reflector. The maximum gap in the marked line at each marker shall be 18-inches. Pavement marking material applied to a prismatic reflector surface shall be removed by the CONTRACTOR, or the reflector shall be replaced at this expense the same working day. When the CONTRACTOR must most remove material from the reflector, the reflector's brightness shall be restored to its prior condition.

3.2 Pavement Preparation

- A. The CONTRACTOR shall clean all visible loose or foreign material from the surface to be marked. The pavement marking equipment shall be equipped with an air jet to remove all debris from the pavement in advance of the applicator gun. The air jet shall operate when marking material is being applied and be synchronized with marking material application.
- B. Pavement markings shall be applied only when the surface is clean and dry. The CONTRACTOR shall power broom clean all surfaces where edge lines are to be applied. When required by the ENGINEER, other surfaces shall also be power broom cleaned.
- C. Marking shall not be applied to Portland cement concrete until the concrete in the areas to be marked is clean of membrane curing material and is dry.

3.3 Layout And Premarking

- A. The CONTRACTOR shall lay out the locations of all lines, words and other symbols to assure their proper placement. The layout and premarking lines shall be approved by the ENGINEER before marking operations are started. When applying longitudinal or transverse lines, the CONTRACTOR shall use existing lines, construction joints or premarking to guide this marking equipment.
- B. Premarking shall be located from survey data or reference points and offset so as to parallel the theoretical edge of the marking lines at a maximum distance of one inch. Templates are required for the layout of arrows, words and other symbols. Premarking for longitudinal lines shall be placed at 40-foot intervals, and shall not exceed two inches in width or 12 inches in length. Premarking for auxiliary markings shall be located as shown on the Drawings or schematic forms provided by the ENGINEER.

3.4 Line Placement Tolerance

- A. Pavement marking lines shall be straight or smoothly curved, true to the alignment of the pavement, and shall not deviate laterally from the proper location at a rate of more than two inches in 100 feet. No deviation greater than three inches will be permitted.

3.5 Line Types

- A. Marking materials shall be applied at a minimum rate of 16.5 gallons per mile per four inch wide stripe, with a 20 mill minimum thickness, and shall, except for parking lot stall markings, be uniformly retroreflective. The minimum rate of application for broken traffic stripes shall be prorated.
- B. Edge lines shall be continuous stripes, four inches in width. Center of stripe shall be located as shown on the Drawings.
- C. Lane lines shall be four inch wide white stripes between contiguous lanes of pavement carrying traffic in the same direction. They shall be dashed unless specified solid. They shall be offset to the left of the longitudinal joint, if present, or the theoretical line lying between contiguous lanes, if a joint is not present. The nearer edge of the stripe shall be two inches to the left of the joint or line.
- D. Centerlines shall be single or double yellow stripes between contiguous lanes of pavement carrying traffic in opposite directions. Centerline marking shall also include two way left-turn lane striping and the outline of left-turn island. Each stripe shall be four inches wide, solid or dashed.
- E. Channelizing lines shall be continuous white stripes, eight inches wide.

- F. Stop lines shall be solid white strips, 24-inches wide. Crosswalk lines shall be solid white strips, 24 inches wide.
- G. Parking lot stall marking lines shall be continuous white stripes, four inches in width.
- H. Lane arrows and letters shall be white markings, with a minimum rate of application of 0.01 gallon per square foot of markings.

3.6 Equipment And Application Of Painted Traffic Markings

- A. The markings shall be applied by machine methods acceptable to the ENGINEER. The paint machine shall be of the spray type capable of satisfactorily applying the paint under pressure with uniformity of feed through nozzles spraying directly upon the pavement. Each machine shall be capable of applying two separate stripes, either solid or skip, at the same time. Each paint tank shall be equipped with a mechanical agitator. Each nozzle shall be equipped with satisfactory cutoff valves which will apply broken or skip lines automatically. Each nozzle shall have a mechanical bead dispenser that will operate simultaneously with the spray nozzle and distribute the beads in a uniform pattern at the rate specified. Each nozzle shall also be equipped with suitable line guides consisting of metallic shrouds or air blasts.
- B. The paint shall be thoroughly mixed prior to application, and shall be applied when the air temperature is above 40°F and rising, to a clean and dry surface.
- C. Glass beads shall be applied at a minimum rate of 5.5 pounds of beads for each gallon of paint.
- D. The painted area shall be protected from traffic until the paint is thoroughly dry.

3.7 Removal Of Pavement Markings

- A. When indicated on the Drawings, pavement markings shall be removed. The markings shall be removed by high-pressure water blast, sand blast, high temperature burning with excess oxygen, or other methods, with the approval of the ENGINEER. Care shall be exercised during marking removal not to scar, discolor or otherwise damage the pavement surface. Overpainting or other methods of covering markings in lieu of removal shall not be permitted.

END OF SECTION 02720

SECTION 02920 – GRASSING FOR SOIL STABILIZATION

PART 1 – GENERAL

1.1. Summary: Work outlined in this section includes:

- Fertilizing
- Seeding or Hydroseeding
- Mulching
- Maintenance

1.2. References: FS O-F-241 - Fertilizers, Mixed, Commercial

1.3. Definition of Weeds: Includes Dandelion, Jimsonweed, Quack Grass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambs quarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy, Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.4. Regulatory Requirements: Comply with regulatory agencies for fertilizer and herbicide composition.

1.5. Quality Assurance: Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.6. Maintenance Data: Supply maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.7. Delivery, Storage, And Handling: Deliver packaged materials in container showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.8. Maintenance: Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition for two (2) cuttings.

PART 2 - PRODUCTS

2.1. Acceptable Seed: Standard grade seed of current or latest season's crop with 99% pure live seed by weight with weed seed not exceeding 0.5% by weight.

2.2. Seed Mixture: See plans for seed specifications and application rates. All seed shall conform to all state laws and to all requirements and regulations of the South Carolina Department of Agriculture. The several varieties of seed shall be individually packaged or bagged and shall display all information required by the department of agriculture. The owner reserves the right to test and reject or approve all seed before seeding .

2.3. Accessories:

- A. **Mulching Material:** Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Wood cellulose fiber, free of growth or germination inhibiting ingredients is acceptable.
- B. **Lime:** Pelletized, natural, ground agricultural grade limestone combined with soluble binder containing not less than eighty-eight (88) percent of total carbonates, so that not less than ninety (90) percent passes a 100-mesh sieve. Apply at the rate of 60 lbs. per 1,000 square feet. If slacked lime is used, apply at 2/3 as much as of ground limestone. Lime shall conform to the current regulations of the Standards of the Fertilizer Board of Control and with Section 16 of the South Carolina Liming Materials Act.
- C. **Peat Humus:** Natural product conforming to ASTM D-2607 shredded and granulated to pass a 1/2 inch mesh screen.

- D. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing following percentages of available plant nutrients. Provide fertilizer with not less than ten (10) percent potassium, and not less than ten (10) percent nitrogen. Provide nitrogen in a form that will be available to lawns during initial period of growth.
- E. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
- F. Erosion Fabric: Photodegradeable / biodegradable jute matting, open weave.
- G. Herbicide: Mixed commercial.
- H. Stakes: Softwood lumber, chisel pointed.
- I. String: Inorganic Fiber.

PART 3 – EXECUTION

- 3.1. Preparation: After loosening subgrade of lawn to a minimum depth of four (4) inches work in soil mixture to a depth of four (4) inches. Remove stones, sticks, roots, rubbish and other extraneous matter over 1-1/2 inches in any dimension. Limit preparation to areas which will be planted promptly after preparation. Work in fertilizer.
- 3.2. Grade lawn areas to smooth, even surface with loose, uniformly fine texture, void of footprints or other depressions. Roll and rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- 3.3. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
- 3.4. Contractor's Inspection: Verify that prepared soil base is ready to receive the work of this Section and that the beginning of installation means acceptance of existing site conditions.
- 3.5. Fertilizing: The contractor shall obtain soil samples from areas to be seeded and submit them to the Clemson Extension Service for analysis. Obtain and submit one sample for each soil type found within the areas to be seeded. Fertilizer rates shall follow those recommendations made on the soil sample analysis for the seed being grown. Apply fertilizer in accordance with manufacturer's instructions. Apply after smooth raking of topsoil and prior to roller compaction. Do not apply fertilizer at same time or with same machine as will be used to apply seed. Mix thoroughly into upper two (2) inches of topsoil. Lightly water to aid the dissipation of fertilizer.
- 3.6. Seeding: See plans for seed specifications and application rates.
 - A. Do not sow immediately following rain or when ground is frozen or too dry.
 - B. Immediately following seeding and compacting, apply mulch to a thickness of 1/2 inch. Maintain clear of shrubs and trees.
 - C. Apply water with a fine spray immediately after each area has been mulched. Saturate to four (4) inches of soil.
 - D. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.
 - E. Seeds shall be sown within thirty (30) days of disturbing contours. The Contractor shall coordinate seeding with the construction of cut and fill slopes. In order to limit the area of erodible material, the owner may require that partially completed slopes be brought to the required slope and that the Contractor perform seeding operations at that time.
 - F. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds five (5) miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two (2) directions at right angles to each other.
 - G. Sow not less than the quantity of seed specified or scheduled.
 - H. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with a fine spray.

- I. Limestone shall be broadcast after establishment of the stand of grass.
- 3.7. Hydroseeding: Apply seeded slurry with a hydraulic seeder. Do not hydroseed area in excess of that which can be mulched on same day.
 - A. Immediately following seeding, apply a mulch to a thickness of 1/2 inch. Maintain clear of shrubs and trees.
 - B. Apply water with a fine spray immediately after each area has been mulched. Saturate to four (4) inches of soil.
- 3.8. Seed Protection: Identify seeded areas with stakes and strings around periphery. Set string height to eighteen (18) inches.
 - A. Cover seeded slopes where grade is four (4) inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
 - B. Lay fabric smoothly on surface, bury top end of each section in six (6) inch deep excavated topsoil trench. Provide twelve (12) inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
 - C. Secure outside edges and overlaps at 36 inch intervals with stakes.
 - D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
 - E. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum six (6) inches.
- 3.9. Maintenance: Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing. Do not mow when soil and weather conditions are such that rutting or other damage to the establishment of seeding may occur.
 - A. Neatly trim edges and hand clip where necessary.
 - B. Immediately remove clippings after mowing and trimming.
 - C. Water to prevent grass and soil from drying out.
 - D. Roll surface to remove minor depressions or irregularities.
- 3.10. Control growth of weeds: Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
 - A. Immediately reseed areas which show bare spots.
 - B. Protect seeded areas with warning signs during maintenance period.
- 3.11. Schedule: Seed all disturbed areas within the limits of work not receiving landscaping. Do not seed wetlands or any wetland buffer areas as defined on the drawing.
- 3.12. Payment: Before acceptance of the grassed areas, the Contractor shall be required to produce a stand of perennial grass sufficient to survive dry periods and winter weather and capable of re-establishment in the spring. Grasses shall be strongly growing of good color, disease free and of a density sufficient to provide visible evidence of strong resistance to erosion. Strands of grass shall not be satisfactory if the bare spots exceed the following limits: more than 10% of any 1,000 square feet area with bare spots larger than 6 square inches; more than 15% of any 1,000 square feet area with bare spots larger than 4 square inches; any bare spots larger than 2 square feet. Payment to the Contractor shall not exceed 90% of the contract unit price for seeding until a satisfactory stand of grass meeting the requirements of this section has been obtained.

END OF SECTION 02920