

University of South Carolina  
Columbia, South Carolina

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**Project Manual for PHRC- GRAVEL LOT RESTORATION**

**Project Number: H27-Z178**

**August 2014**

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**PROJECT NAME:** PHRC- GRAVEL LOT RESTORATION

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## **TECHNICAL SPECIFICATIONS**

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**SE-310  
REQUEST FOR ADVERTISEMENT**

2011 Edition  
Rev. 7/20/2011

**PROJECT NAME:** PHRC- GRAVEL LOT RESTORATION

**PROJECT NUMBER:** H27-Z178

**PROJECT LOCATION:** Columbia, SC

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:** \$100,000 - \$150,000

**DESCRIPTION OF PROJECT:** Project site is bounded by Assembly, Pendleton and Park Streets in Columbia. The project will consist of converting a portion of the site from the current gravel/stone surface to a predominantly green landscape. An existing drainage channel and detention basin will be reconstructed, and soil amendments, irrigation and new grassing will be added. Small & minority business participation is encouraged. Bidders are responsible for obtaining bidding documents from the purchasing website. <http://purchasing.sc.edu>

**A/E NAME:** Fuss & O'Neill

**A/E CONTACT:**Betsy Kaemmerlen

**A/E ADDRESS:** Street/PO Box:717 Lady Street, Suite E

City: Columbia

State: SC ZIP: 29201-

**EMAIL:** bkaemmerlen@fando.com

**TELEPHONE:** 800-286-2469 x 6112

**FAX:** \_\_\_\_\_

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

**BIDDING DOCUMENTS/PLANS MAY BE OBTAINED FROM:** <http://purchasing.sc.edu> (See Facilities Construction Solicitations & Awards)

**PLAN DEPOSIT AMOUNT:** \_\_\_\_\_ **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):*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

**DATE:** 8/26/2014 **TIME:** 2pm **PLACE:** 743 Greene St, Conf Rm 53, Columbia, SC 29208

**AGENCY:** University of South Carolina

**NAME OF AGENCY PROCUREMENT OFFICER:** Juaquana Brookins

**ADDRESS:** Street/PO Box:743 Greene Street

City: Columbia

State: SC ZIP: 29208-

**EMAIL:** jbrookin@fmc.sc.edu

**TELEPHONE:** 803.777.3596

**FAX:** 803.777.7334

**BID CLOSING DATE:** 9/10/2014 **TIME:** 1pm **LOCATION:** 743 Greene St, Conf Rm 53, Columbia, SC 29208

**BID DELIVERY ADDRESSES:**

**HAND-DELIVERY:**

Attn: Juaquana Brookins

USC - Facilities

743 Greene Street

Columbia, SC 29208

**MAIL SERVICE:**

Attn: Juaquana Brookins

USC - Facilities

743 Greene Street

Columbia, SC 29208

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

**SE-310**  
**REQUEST FOR ADVERTISEMENT**

**2011 Edition**  
Rev. 7/20/2011

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**APPROVED BY** (*Office of State Engineer*): \_\_\_\_\_

**DATE:** \_\_\_\_\_

A701

Instruction to Bidders  
(1997 Edition)

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

**OSE FORM 00201****STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****OWNER:** University of South Carolina**PROJECT NUMBER:** H27-Z178**PROJECT NAME:** PHRC-Gravel Lot Restoration**PROJECT LOCATION:** Columbia, SC**PROCUREMENT OFFICER:** Juaquana Brookins**1. STANDARD SUPPLEMENTAL INSTRUCTIONS TO BIDDERS**

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

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

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

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

**2. MODIFICATIONS TO A701-1997**

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

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

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

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

**2.4.** *In Section 2.1.1:*

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

*Insert the following at the end of this section:*

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

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

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

**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 nonresponsible.

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

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

**2.5 ETHICS CERTIFICATE**

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

**2.6 RESTRICTIONS APPLICABLE TO BIDDERS & GIFTS**

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

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

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

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

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

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

**2.10. Insert the following Section 3.1.5**

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

**2.11. In Section 3.2.2:**

*Delete the words "and Sub-bidders"*

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

**2.12. In Section 3.2.3:**

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

*Insert the following at the end of the section:*

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

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

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

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

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

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

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

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

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

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

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

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

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

**4.1.3** Sums shall be expressed in figures.

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

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

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

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

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

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

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

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

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

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

**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](http://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:**

**Building Where Posted:**

**Address of Building:**

**WEB site address (if applicable):**

**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](mailto:protest-ose@mmo.sc.gov),

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

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

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

**9.6 SOLICITATION INFORMATION FROM SOURCES OTHER THAN OFFICIAL SOURCE**

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

**9.7 BUILDER'S RISK INSURANCE**

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

**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**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**END OF DOCUMENT**



AIA 310

Bid Bond

(2010 Edition)

Original AIA Document on file at the office of

University of South Carolina

743 Greene Street

Columbia, South Carolina 29208

**SE-330 – LUMP SUM BID  
BID FORM**

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

**BID SUBMITTED BY:** \_\_\_\_\_  
(Bidder's Name)

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

**FOR PROJECT: PROJECT NAME** PHRC- GRAVEL LOT RESTORATION  
**PROJECT NUMBER** H27-Z178

**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):* The project will consist of converting a portion of the site from the current gravel/stone surface to a predominantly green landscape. An existing drainage channel and detention basin will be reconstructed, and soil amendments, irrigation and new grassing will be added. .

\_\_\_\_\_, which sum is hereafter called the Base Bid.

(Bidder - insert Base Bid Amount on line above)

**SE-330 – LUMP SUM BID  
BID FORM**

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

**ALTERNATE # 1** (Brief Description): NA

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): NA

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): NA

ADD TO or  DEDUCT FROM BASE BID: \_\_\_\_\_

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

**SE-330 – LUMP SUM BID  
 BID FORM**

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

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

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

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

## **INSTRUCTIONS FOR SUBCONTRACTOR LISTING**

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

**SE-330 – LUMP SUM BID  
BID FORM**

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

**§ 9. TIME OF CONTRACT PERFORMANCE AND LIQUIDATED DAMAGES**

a. **CONTRACT TIME:** Bidder agrees that the Date of Commencement of the Work shall be established in a Notice to Proceed to be issued by the Owner. Bidder agrees to substantially complete the Work within **30** 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 **\$100.00** for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted time for Substantial Completion as provided in the Contract Documents. This sum is intended by the parties as the predetermined measure of compensation for actual damages, not as a penalty for nonperformance.

**§ 10. AGREEMENTS**

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

**§ 11. ELECTRONIC BID BOND**

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

**Electronic Bid Bond Number:** \_\_\_\_\_

**Signature and Title:** \_\_\_\_\_

**SE-330 – LUMP SUM BID  
BID FORM**

**BIDDER'S TAXPAYER IDENTIFICATION**

FEDERAL EMPLOYER'S IDENTIFICATION NUMBER: \_\_\_\_\_

*OR*

SOCIAL SECURITY NUMBER: \_\_\_\_\_

**CONTRACTOR'S CLASSIFICATIONS AND SUBCLASSIFICATIONS WITH LIMITATIONS**

*Classification(s) & Limits:* \_\_\_\_\_

*Subclassification(s) & Limits:* \_\_\_\_\_

*SC Contractor's License Number(s):* \_\_\_\_\_

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

**SIGNATURE**

**BIDDER'S LEGAL NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**BY:** \_\_\_\_\_  
*(Signature)*

**DATE:** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**EMAIL:** \_\_\_\_\_

A101

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

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



**OSE FORM 00501**  
**STANDARD MODIFICATIONS TO AGREEMENT BETWEEN**  
**OWNER AND CONTRACTOR**

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**OWNER:** University of South Carolina

**PROJECT NUMBER:** H27-Z178

**PROJECT NAME:** PHRC- GRAVEL LOT RESTORATION

**1. STANDARD MODIFICATIONS TO AIA A101-2007**

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

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

**2. MODIFICATIONS TO A101**

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

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

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

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

**2.3.** *Delete Section 3.2 and substitute the following:*

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

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

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

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

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

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

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

**OSE FORM 00501**  
**STANDARD MODIFICATIONS TO AGREEMENT BETWEEN**  
**OWNER AND CONTRACTOR**

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

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

2.8. *In Section 5.1.9, delete the words “Except with the Owner’s prior approval, the” before the word “Contractor.”*

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

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

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

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

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

**Name:** Tom Opal  
**Title:** Sr. Project Manager  
**Address:** 743 Greene St, Columbia, SC 29208  
**Telephone:** 803.777.7076 **FAX:** \_\_\_\_\_  
**Email:** tnopal@fmc.sc.edu

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

**Name:** Emily Jones  
**Title:** Project Manager  
**Address:** 743 Greene St, Columbia, SC 29208  
**Telephone:** 803.777.7592 **FAX:** \_\_\_\_\_  
**Email:** efjones@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:** \_\_\_\_\_

**OSE FORM 00501**  
**STANDARD MODIFICATIONS TO AGREEMENT BETWEEN**  
**OWNER AND CONTRACTOR**

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**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:** Betsy Kaemmerlen  
**Title:** Engineer  
**Address:** 717 Lady Street, Suite E, Columbia, SC 29201  
**Telephone:** 800-286-2469 **FAX:** \_\_\_\_\_  
**Email:** bkaemmerlen@fando.com

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

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

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

**END OF DOCUMENT**

A201

General Conditions of the Contract for  
Construction  
(2007 Edition)

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

# OSE FORM 00811

## STANDARD SUPPLEMENTARY CONDITIONS

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**OWNER:** University of South Carolina

**PROJECT NUMBER:** H27-Z178

**PROJECT NAME:** PHRC- GRAVEL LOT RESTORATION

### 1 GENERAL CONDITIONS

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

### 2 STANDARD SUPPLEMENTARY CONDITIONS

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

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

### 3 MODIFICATIONS TO A201-2007

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

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

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

**3.3** *Add the following Section 1.1.9:*

#### 1.1.9 NOTICE TO PROCEED

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

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

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

**3.5** *Delete Section 1.5.1 and substitute the following:*

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

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### 3.6 *Delete Section 2.1.1 and substitute the following:*

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

### 3.7 *Delete Section 2.1.2 and substitute the following:*

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

### 3.8 *Delete Section 2.2.3 and substitute the following:*

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

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

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

### 3.10 *Delete Section 2.2.5 and substitute the following:*

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

### 3.11 *Add the following Sections 2.2.6 and 2.2.7:*

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

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

### 3.12 *Delete Section 2.4 and substitute the following:*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

acceptable to the Owner,

**3.22** *Delete Section 3.9.2 and substitute the following:*

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

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

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

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

**3.24** *Delete Section 3.10.3 and substitute the following:*

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

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

**3.25** *Add the following Section 3.10.4:*

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

**3.26** *Add the following Section 3.12.5.1:*

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

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

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

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



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**3.29** Add the following Sections 3.13.2 and 3.13.3:

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

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

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

including loss of use resulting therefrom,

**3.31** *Delete Section 4.1.1 and substitute the following:*

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

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

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

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

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

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

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

**3.35** *In Section 4.2.5, after the words “evaluations of the” and before the word “Contractor’s,” insert the following:*

Work completed and correlated with the

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

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

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

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

**3.38** *Delete Section 4.2.14 and substitute the following:*

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

**3.39** *Delete Section 5.2.1 and substitute the following:*

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

**3.40** *Delete Section 5.2.2 and substitute the following:*

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

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

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

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

**3.43** *Add the following Section 5.2.5:*

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

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

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

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

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

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

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

**3.45** *Delete the last sentence of Section 5.4.1.*

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

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

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

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

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

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

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

**3.49** *Delete Section 7.2.1 and substitute the following:*

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

- .1** The change in the Work;

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

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

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

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

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

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

**3.51** *Delete 7.3.3 and substitute the following:*

**7.3.3 PRICE ADJUSTMENTS**

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

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

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

**3.52** *Delete Section 7.3.7 and substitute the following:*

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

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- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work.

**3.53** *Delete Section 7.3.8 and substitute the following:*

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

**3.54** *Add the following Sections 7.5 and 7.6:***7.5 AGREED OVERHEAD AND PROFIT RATES**

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

- .1 To the Contractor for work performed by the Contractor's own forces, 17% of the Contractor's actual costs.
- .2 To each Subcontractor for work performed by the Subcontractor's own forces, 17% of the subcontractor's actual costs.
- .3 To the Contractor for work performed by a subcontractor, 10% of the subcontractor's actual costs (not including the subcontractor's overhead and profit).

**7.6 PRICING DATA AND AUDIT****§ 7.6.1 Cost or Pricing Data.**

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

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

**§ 7.6.3 Records Retention.**

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

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**3.55** Delete Section 8.2.2 and substitute the following:

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

**3.56** Delete Section 8.3.1 and substitute the following:

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

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

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

**3.58** Delete Section 9.2 and substitute the following:

**9.2 SCHEDULE OF VALUES**

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

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

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

**3.59** Delete Section 9.3.1 and substitute the following:

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

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

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

*Insert the following at the end of Section 9.3.2:*

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

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

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

*In the last sentence, delete the third item starting with “(3) reviewed copies” and ending with “Contractor’s right to payment.”*

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

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

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

**3.63** *In Section 9.6.2, delete the word “The...” at the beginning of the first sentence and substitute the following:*

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

**3.64** *Delete Section 9.7 and substitute following:*

**9.7 FAILURE OF PAYMENT**

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

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

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

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

**3.67** *Delete Section 9.8.3 and substitute the following:*

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

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

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

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

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

**3.70** *Delete Section 9.10.1 and substitute the following:*

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

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

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



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

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

**3.73** Delete Section 9.10.5 and substitute the following:

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

**3.74** Add the following Section 9.10.6:

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

**3.75** Delete Section 10.3.1 and substitute the following:

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

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

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

**3.77** Delete Section 10.3.3 and substitute the following:

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

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

In addition to its obligations under Section 3.18, the

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

**OSE FORM 00811****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>
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**(3) WORKER'S COMPENSATION:**

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

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

**3.82** *Delete Section 11.1.3 and substitute the following:*

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

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

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

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

**3.83** *Delete Section 11.1.4 and substitute the following:*

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

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

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

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

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

**3.87** *Delete Section 11.3.2 and substitute the following:*

#### **11.3.2 BOILER AND MACHINERY INSURANCE**

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

**3.88** *Delete Section 11.3.3 and substitute the following:*

#### **11.3.3 LOSS OF USE INSURANCE**

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

**3.89** *Delete Section 11.3.4 and substitute the following:*

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

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

**3.91** *Delete Section 11.3.6 and substitute the following:*

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

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

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

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

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

**3.94** Delete Section 11.3.9 and substitute the following:

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

**3.95** Delete Section 11.3.10 and substitute the following:

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

**3.96** Delete Section 11.4.1 and substitute the following:

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

**3.97** Delete Section 11.4.2 and substitute the following:

**11.4.2** The Performance and Labor and Material Payment Bonds shall:

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

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**3.98** *Add the following Sections 11.4.3 and 11.4.4:*

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

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

**3.99** *Delete Section 12.1.1 and substitute the following:*

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

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

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

unless otherwise provided in the Contract Documents.

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

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

**3.103** *Delete Section 13.1 and substitute the following:*

**13.1 GOVERNING LAW**

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

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

**13.2 SUCCESSORS AND ASSIGNS**

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

**3.105** *Delete Section 13.3 and substitute the following:*

**13.3 WRITTEN NOTICE**

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

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

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

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

Unless expressly provided otherwise,

**3.107** *Add the following Section 13.4.3:*

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

**1.5** Ownership and Use of Drawings, Specifications and Other Instruments of Service;

**3.5** Warranty

**3.17** Royalties, Patents and Copyrights

**3.18** Indemnification

**7.6** Cost or Pricing Data

**11.1** Contractor's Liability Insurance

**11.4** Performance and Payment Bond

**15.1.6** Claims for Listed Damages

**15.1.7** Waiver of Claims Against the Architect

**15.6** Dispute Resolution

**15.4** Service of Process

**3.108** *Delete Section 13.6 and substitute the following:*

**13.6 INTEREST**

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

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

**3.110** *Add the following Sections 13.8 through 13.16:*

**13.8 PROCUREMENT OF MATERIALS BY OWNER**

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

**13.9 INTERPRETATION OF BUILDING CODES**

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

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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](http://www.procurement.sc.gov))

**13.13 SETOFF**

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

**13.14 DRUG-FREE WORKPLACE**

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

**13.15 FALSE CLAIMS**

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

**13.16 NON-INDEMNIFICATION:**

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

**3.111** *Delete Section 14.1.1 and substitute the following:*

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

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

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

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

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

**3.113** *In Section 14.1.4, replace the word “repeatedly” with the word “persistently.”***3.114** *Delete Section 14.2.1 and substitute the following:***14.2.1** The Owner may terminate the Contract if the Contractor

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

**3.115** *In Section 14.2.2, delete the parenthetical statement “, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,” immediately following the word “Owner” in the first line.***3.116** *In Section 14.2.4, replace the words “Initial Decision Maker” with the word “Architect”***3.117** *Add the following Section 14.2.5:*

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

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

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

**3.119** *Delete Section 14.4.1 and substitute the following:*

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

**3.120** *Delete Section 14.4.2 and substitute the following:*

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;



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- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and
- .4 complete the performance of the Work not terminated, if any.

**3.121** *Delete Section 14.4.3 and substitute the following:*

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

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

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

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

- .1 the termination was due to withdrawal of funding by the General Assembly, Governor, or Budget and Control Board or the need to divert project funds to respond to an emergency as defined by Regulation 19-445.2110(B) of the South Carolina Code of Regulations, as amended;
- .2 funding for the reinstated portion of the work has been restored;
- .3 circumstances clearly indicate a requirement for the terminated work; and
- .4 reinstatement of the terminated work is advantageous to the Owner.

**14.5 CANCELLATION AFTER AWARD BUT PRIOR TO PERFORMANCE**

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

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

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

**3.124** *Delete Section 15.1.2 and substitute the following:***15.1.2 NOTICE OF CLAIMS**

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

**3.125** *Delete Section 15.1.3 and substitute the following:***15.1.3 CONTINUING CONTRACT PERFORMANCE**

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

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

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

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

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

**3.128** *Delete Section 15.1.6 and substitute the following:***15.1.6 CLAIMS FOR LISTED DAMAGES**

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

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

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

**3.129** *Add the following Section 15.1.7:***15.1.7 WAIVER OF CLAIMS AGAINST THE ARCHITECT**

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

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

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

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

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

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

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

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

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

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

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

**15.6 DISPUTE RESOLUTION**

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

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

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

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

**15.6.5 SERVICE OF PROCESS**

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

**3.132** Add the following Article 16:

**ARTICLE 16 PROJECT-SPECIFIC REQUIREMENTS AND INFORMATION**

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

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

- Civil: \_\_\_\_\_
- Structural: \_\_\_\_\_
- Mechanical: \_\_\_\_\_
- Plumbing: \_\_\_\_\_
- Electrical: \_\_\_\_\_
- Gas: \_\_\_\_\_
- Other *(list)*: \_\_\_\_\_

Remarks: \_\_\_\_\_

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

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

NONE

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

See 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)*

See 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)*

See Specifications

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

Updated: July 15, 2011

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.



Project Name: PHRC- GRAVEL LOT RESTORATION  
Project Number: H27-Z178  
University of South Carolina

**CONTRACTOR'S ONE YEAR GUARANTEE**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

WE \_\_\_\_\_  
as 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- GRAVEL LOT RESTORATION

State Project Number: H27-Z178

Brief Description of Awarded Work, as found on the SE-330, Bid Form: The project will consist of converting a portion of the site from the current gravel/stone surface to a predominantly green landscape. An existing drainage channel and detention basin will be reconstructed, and soil amendments, irrigation and new grassing will be added.

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

Name: Fuss & O'Neill  
Address: 717 Lady Street, Suite E  
Columbia, SC 29201

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)*

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**Performance Bond**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**11. Definitions**

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

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

**SE-357  
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- GRAVEL LOT RESTORATION  
Project Number: H27-Z178

Brief Description of Awarded Work, as found on the SE-330, Bid Form: The project will consist of converting a portion of the site from the current gravel/stone surface to a predominantly green landscape. An existing drainage channel and detention basin will be reconstructed, and soil amendments, irrigation and new grassing will be added.

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

Name: Fuss & O'Neill  
Address: 717 Lady Street, Suite E  
Columbia, SC 29201

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

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

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 2 BOND NUMBER \_\_\_\_\_  
*(shall be no earlier than Date of Contract)*

CONTRACTOR

SURETY

By: \_\_\_\_\_  
(Seal)

By: \_\_\_\_\_  
(Seal)

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

Print Title: \_\_\_\_\_  
(Attach Power of Attorney)

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

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

**SE-357****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.

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## SECTION 01100 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Work sequence.
  - 4. Schedule of construction.
  - 5. Access to site.
  - 6. Work restrictions.
  - 7. Specification formats and drawing conventions.
  - 8. Utility locations.
  - 9. Storage and handling of materials.

#### 1.3 PROJECT INFORMATION

- A. Project Identification: Project consists of, but is not limited to, installing a swale and detention area, manufacturing topsoil on site, seeding and irrigation to establish a lawn.
  - 1. Project Location: Corner of Assembly, Pendleton and Park Streets, Columbia, SC.
    - a. Includes areas within the Limit of Disturbance as shown on Drawings.
    - b. The eventual Phase Two shall include the existing staging area on the northeast corner of the site. This is anticipated to be released in the fall of 2015, but access to this area of the site must be maintained throughout the project.
  - 2. Owner: The University of South Carolina.
- B. Engineer Identification: The Contract Documents, dated July 2014, were prepared for the Project by Fuss & O'Neill Inc.

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work includes, but is not limited to, removing existing stockpiles, construction of installing a swale and detention area, providing overflow structure and piping to existing drainage, manufacturing topsoil on site, seeding and irrigation to establish a lawn, and the stabilization of landscape areas disturbed by construction and all work as indicated on the Drawings.

## 1.5 WORK SEQUENCE

- A. The Work shall be conducted in the general sequence of site preparation, earthwork, drainage features, irrigation installation and lawn establishment. .

## 1.6 SCHEDULE OF CONSTRUCTION

- A. Submit construction schedule to the Engineer at the earliest possible time but no later than 10 Days prior to beginning the Work.

## 1.7 ACCESS TO SITE

- A. General: Contractor shall have full use of Project Site within the Limit of Disturbance for construction operations during the construction period. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

- B. Use of Site: Limit use of Project site to areas within the Contract limits. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to limits of disturbance as indicated on the Contract Drawings.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, contractor utilizing the on-site staging area, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule to minimize access impacts to driveways and entrances by construction operations.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- C. Minimize damage to access routes, and restore damaged areas to their original condition or better.

- D. Acquire necessary permits, authorizations and approvals for working in, on or from property, rights-of-way or easements owned by The City of Columbia or State of South Carolina. The Contractor shall secure access rights of his own for such work.

- E. Remove and restore to original condition walls, fences, structures, utility lines, poles, guy wires, anchors, and other improvements required to be relocated for construction of the Work. Costs for such activity shall be borne by the Contractor. Notify the Engineer, the Owner, and utilities of intended modification or disruption to their property prior to the start of construction and cooperate with them in the scheduling and performance of his operations. The right-of-ways and areas within the Project limits are intended to provide reasonable access and working area for efficient operations to be performed within the restrictions shown on the Contract Drawings. The Contractor shall be responsible for organizing operations to perform within the restrictions shown on the plans.

- F. If the Contractor, by direct negotiation and bargain with any land owner, lessee or tenant, has secured any right to use more space or greater privileges in the space provided by the Owner for purposes incidental to the performance of the Contract, he shall, upon request of the Engineer, furnish to the Engineer proper evidence that such additional rights have been properly secured and assurance that no damage to or claim upon the Owner or Engineer will arise therefrom. Neither



the Owner nor the Engineer shall be liable in any way for any expense incurred by the Contractor in securing any such right to use additional property.

- G. The Contractor shall be responsible for and reimburse the Owner and others for any and all losses, damage or expense which the Owner or those others may suffer, either directly or indirectly or through any claims of any person or party, for any trespass outside the spaces and rights of way provided by the Owner to the Contractor or any violation or disregard of the terms and conditions established for the use or occupancy of those rights or for negligence in the exercise of those rights. The Owner may retain or deduct from any sum or sums due or to become due to the Contractor such amount or amounts as may be proper to insure the Owner against loss or expense by reason of the failure of the Contractor to observe the limits and conditions of the rights-of-way, rights-of-access, easements, etc., provided by the Owner.

## 1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated. Should access to the Site at other times be necessary, make arrangements with Owner.
1. Prior approval must be obtained from the Owner or State, as applicable, to work any hours or days other than those listed.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner and affected property owner not less than seven days in advance of proposed utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than two days in advance of proposed disruptive operations.

## 1.9 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

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

#### 1.10 UTILITY LOCATIONS

- A. The Contractor shall contact PUPS 'Call Before You Dig' (South Carolina 811) at 1-888-721-7877, three full working days (not including the day you call) prior to any excavation performed on site.
- B. The underground utilities and structures at the site have been located primarily from information furnished by others and the locations as depicted on the Drawings are considered approximate as to size and location. The Contractor shall determine the exact location of all existing utilities prior to commencing work, and agrees to be fully responsible for any and all damages which may be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

#### 1.11 STORAGE AND HANDLING OF MATERIALS

- A. At all times, handle and store materials and equipment to be incorporated in the work in a manner to prevent intrusion of foreign matter, warping, twisting, bending, breaking, and any injury, theft or damage of every description to the material or equipment.
- B. Upon delivery, promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged. Packages, materials and equipment showing evidence of damage shall be rejected and replaced at no additional cost to the Owner.
- C. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Provide access to products during storage for inspection.
  1. If products are stored for an extended period of time, conduct periodic inspections to assure products are undamaged and are maintained under required conditions.
  2. Keep an inspection log indicating date and time of inspections. Note problems, if any.
- D. For exterior storage of fabricated products, place sloped supports beneath products to keep items from coming in contact with the ground. Cover products subject to deterioration with impervious sheet covering providing ventilation to avoid condensation.
- E. Store loose granular materials on solid surfaces in a well-drained area and prevent from mixing with foreign matter.

- F. Store excavated soils and other construction materials in non-wooded areas near excavations. Store synthetic materials off the ground (or otherwise) to prevent accumulation of dirt or grease, and in a position to prevent accumulation of standing water.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. The Contractor shall provide his own detailed construction schedule to the Engineer prior to the initiation of Work. Deviation from Contractor's schedule will require the Contractor to submit notification of such change in schedule to the Engineer at least seven (7) days prior to the subject change. Such notification shall be accompanied by a revised project schedule.
- B. In addition to the submittals required by the various Technical Specifications, provide the following submittals:
  - 1. Schedule of Construction. The Contractor shall submit his proposed schedule of construction (schedule of operations) to the Owner at the earliest possible time, and no later than 10 days prior to beginning the Work or at the pre-construction conference, whichever is earlier.
    - a. Provide a bar-chart-type or Gantt-chart-type schedule that clearly indicates the start date and duration of specific construction activities. The Contractor shall not work on Saturday, Sunday, or Holidays without approval of the Owner. Portions of the Work to be performed by subcontractors, the Owner or utilities shall be clearly indicated as such.
    - b. Incorporate the erosion control provisions into the construction schedule.
    - c. No work shall be started until the schedule of construction is reviewed and approved by the Owner.
    - d. Contract completion date shall not be changed by submission of a schedule, unless specifically authorized by Change Order approved by the Owner.

### 3.2 PROJECT MEETINGS

- A. Pre-construction Conference: Prior to the start of construction, a pre-construction conference shall be held with the representatives of the Contractor, Engineer, Owner and other interested parties.
- B. Progress Meetings: During progress of the Work, meetings may be required in order that scheduling and overall job coordination can be maintained. The Contractor shall be required to attend these meetings throughout the project duration as scheduled by the Engineer or Owner.

### 3.3 REGULATORY COMPLIANCE

- A. All equipment operators and workers performing work at the proposed location shall hold the appropriate State of South Carolina licenses for their responsibilities.

- B. Contractor shall provide a 'Competent Person', as defined by the US Department of Labor Occupational Safety & Health Administration (OSHA), for the location of the proposed work.
- C. All required licenses and/or certificates for work being performed shall be copied and supplied to the Owner prior to beginning work by each contractor, subcontractor or vendor employee conducting work at the site. All required licenses and/or certificates for work being performed shall be in the possession of the person(s) while performing the work.
- D. The Contractor shall be solely responsible to conduct their operations in a manner that meets all local, state and federal regulations including SCDHEC, SCDOT, USEPA, OSHA and labor and equipment licensing requirements.

### 3.4 UTILITIES

- A. Protect public or private utilities within and adjacent to the Project Limits including gas pipes, water pipes, irrigation systems, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from damage of every description and any such damage thereto shall be repaired or otherwise made good by the Contractor, at his expense, in a manner acceptable to the Engineer.
- B. Conduct activities so as to not damage or disturb existing underground or above ground utilities. Protect and support all utilities during execution of the work. There may be above ground and underground utilities in the designated work area; existing lines may not be shown on the plans. The approximate position of certain underground utilities is shown on the plans for information only. The Contractor shall locate these and other possible unknown utility lines by use of an electronic pipe finder, or other preferred means, and shall excavate and expose all existing underground lines in advance of any excavation work under this contract. When the Contractor has located all utilities, the Contractor shall be responsible for planning and coordinating the required work around the existing utilities.
- C. Utility poles and/or guy wires located near proposed excavations, as indicated on the Contract Drawings, must be supported and protected. The Contractor shall be responsible for contacting the proper utility company and/or owner and for coordinating and performing all tasks necessary to support the poles and construct the project in accordance with the Contract Documents. Tasks may include, but not be limited to, obtaining any and all permits, coordinating with the utility company for temporary supports, and for paying for all associated costs. This allowance shall be included in the Base Bid Contract Price.
- D. Locate, identify, and temporarily disconnect sections of utility services to be removed and replaced only if determined necessary by Engineer.
  - 1. Arrange with utility companies to shut off utilities as indicated in Division 1 Specification "Coordination."

END OF SECTION

## SECTION 01150 - COORDINATION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations with organizations, agencies, utilities, city, owner, and other contractor's work forces.

#### 1.2 GENERAL COORDINATION

- A. Coordinate the Work with Authorities having jurisdiction within the work area.

#### 1.3 COORDINATION WITH UTILITIES

- A. Contact PUPS 'Call Before You Dig' (South Carolina 811) at 1-888-721-7877 at least 72 hours (or three full working days) prior to the start of construction (excluding the day called, weekends and holidays), to mark out the utility locations.
  - 1. If above or below ground utilities are damaged during the course of the Work, immediately notify the appropriate utility companies of the incident.
- B. Natural Gas Utilities: Notify SCE&G at start of construction of estimated construction schedule. Notify SCE&G immediately if damage to gas service occurs and at least 10 working days before representatives from SCE&G need to be on site should repairs to gas services be required, or as otherwise indicated by SCE&G. Perform coordination and utility installation assistance in accordance with SCE&G and City of Columbia Specifications. Contractor shall be responsible for satisfying all SCE&G requirements.
  - 1. Natural Gas contacts:
    - a. Engineering and Construction – (803) 217-7351
      - 1) Cindy Ostrander – (803) 217-9245
    - b. 24-Hour Customer Service – (800) 251-7234
    - c. Natural Gas Emergency – (800) 815-0083
- C. Electric Utilities and utility pole support: Notify SCE&G contact at start of construction with estimated utility support dates. Notify SCE&G at least 10 working days before representatives need to be on site, or as otherwise indicated by SCE&G. Perform coordination and utility installation assistance in accordance with SCE&G and City of Columbia Specifications. Contractor shall be responsible for satisfying all SCE&G requirements
  - a. Engineering and Construction – (803) 217-8427
    - 1) Contact: Henry Lephart – (803) 217-8427

- b. 24-Hour Customer Service – (800) 251-7234
  - c. Electric Emergency – (888) 333-4465
- D. Water and Wastewater Utilities: Notify City of Columbia Department of Utilities and Engineering at start of construction with estimated start and sequence of construction. Notify City at least 10 working days before representatives from the City need to be on site, or as otherwise indicated.
- 1. Department of Utilities and Engineering
    - a. Contact: Dana Higgins – (803) 545-3400
- E. Telephone and Cable TV Utilities: Notify AT&T and Time Warner Cable at start of construction with estimated start and sequence of construction. Notify AT&T and Time Warner Cable of any potential disruptions/interruptions to service.
- 1. AT&T
    - a. Contact: Mark Cleary – (803) 401-2325
  - 2. Time Warner Cable
    - a. Contact: Steve Jones – (803) 518-1100

#### 1.4 COORDINATION WITH LOCAL AUTHORITIES

- A. Report the location and duration of road closing or traffic detour to the various Town and State Authorities, including the Public Works, Police, Fire, Emergency Services, Sanitation and School Departments, a minimum of 2 weeks prior to roadway construction activities.

##### Contact Information

- 1. Police Department: Chief Scott – (803) 545-3510
- 2. Special Operations Division: Brenda Murphy – (803) 545-3507
- 3. Fire Department: Chief Jenkins – (401) 782-0666
- 4. Emergency Operations: Captain Eargle – (803) 545-3239
- 5. Public Works: Director Robert A. Anderson – (803) 545-3780
- 6. City Street Superintendent: Robert Sweatt – (803) 545-3790
- 7. City Electrician: Robert Lee – (803) 545-3850
- 8. City Traffic Engineer: David Brewer – (803) 545-3850
- 9. City Forestry and Beautification Division – Sara Hollar (803) 545-3860

#### 1.5 STATE COORDINATION

- A. Notify SCDOT as required of scheduled work on State property in advance of such activity.

- B. Coordinate traffic details that require uniformed officers.

1.6 PERMITS

- A. Obtain required permits, and insurance required in connection with such permits.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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## SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.1 SUMMARY

- B. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General Project coordination procedures.
  - 2. Coordination Drawings.
  - 3. Administrative and supervisory personnel.
  - 4. Project meetings.

#### 1.2 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Project closeout activities.

### 1.3 SUBMITTALS

- A. Staff Names: Within five days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Insert special requirements that exceed requirements contained in the General and Supplementary Conditions for superintendent and assistants.

### 1.4 PROJECT MEETINGS

- A. General: Engineer will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Engineer will inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. At a minimum, project superintendent shall attend.
  2. Agenda: Engineer will prepare the meeting agenda and distribute the agenda to all invited attendees.
  3. Minutes: Engineer will record significant discussions and agreements achieved, and distribute the meeting minutes to everyone concerned, including Owner, within 10 days of the meeting.
- B. Preconstruction Conference: Engineer will schedule a preconstruction conference before start of construction, at a time convenient to Owner, Contractor, and Engineer, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; and Contractor and its superintendent; shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Critical work sequencing.
    - c. Designation of responsible personnel.
    - d. Procedures for processing field decisions and Change Orders.
    - e. Procedures for processing Applications for Payment.
    - f. Distribution of the Contract Documents.
    - g. Submittal procedures.
    - h. Preparation of Record Documents.
    - i. Use of the premises.
    - j. Responsibility for temporary facilities and controls.
    - k. Parking availability.

- l. Office, work, and storage areas.
  - m. Equipment deliveries and priorities.
  - n. First aid.
  - o. Security.
  - p. Progress cleaning.
  - q. Working hours.
3. Execution of Owner-Contractor Agreement including executed bonds and insurance certificates may be completed immediately prior to pre-construction conference.
- C. Progress Meetings: Engineer will conduct progress meetings at weekly intervals and more often if conditions warrant.
1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity required to finalize discussions regarding current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Access.
      - 6) Temporary facilities and controls.
      - 7) Work hours.
      - 8) Hazards and risks.
      - 9) Progress cleaning.
      - 10) Quality and work standards.
      - 11) Change Orders.
      - 12) Documentation of information for payment requests.

3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

## SECTION 01330 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.
- C. Addresses: Include mailing address, telephone number, facsimile number, and e-mail address.

#### 1.3 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals, unless requested to by the contractor.
- B. Method of Transmitting Submittals: Electronic transmission of submittals, including a facsimile and e-mail process, will not be allowed.
- C. Clarity: Provide neat, clean and legible printed materials that can be easily reproduced by normal photocopying or blueprinting process. Illegible submittals will be returned unreviewed.
- D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
  - 3. Do not commence portion of the Work requiring a submission until submission has been accepted by the Engineer.
- E. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
  - 1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

2. Concurrent Review: Where concurrent review of submittals by Engineer's consultants, the Owner, or other parties is required, allow 20 days for initial review of each submittal.
  3. If intermediate submittal is necessary, process it in same manner as initial submittal.
  4. Allow 10 calendar days for processing each resubmittal.
  5. No extension of the Contract Time or claims for delay will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- F. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
  3. Include the following information on label for processing and recording action taken:
    - a. Project name as shown on the Contract Document Cover.
    - b. Date.
    - c. Name and address of Engineer.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier including name and telephone number of contact.
    - g. Name of manufacturer including name and telephone number of contact.
    - h. Unique identifier, including revision number.
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Other necessary identification.
    - l. Owner name.
- G. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals. Provide list or narrative of deviations on Submittal Transmittal form.
- H. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Engineer.
  2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.
- I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous

- submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
  3. Transmittal Form: Use sample form at end of Section.
- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.
- 1.4 QUALITY ASSURANCE
- A. Where "Standard Specifications" is used, it shall mean "State of South Carolina Department of Transportation Standard Specifications for Highway Construction, Revision 2007" and all amendments.

## PART 2 - PRODUCTS

### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required as per Drawings.
1. Number of Copies: Submit four copies of each submittal, unless otherwise indicated. Mark up and retain one returned copy as a Record Document.
    - a. Submit a preliminary single copy of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. Engineer will return submittal with options selected.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Printed performance curves.
    - g. Operational range diagrams.

- h. Mill reports.
  - i. Standard product operating and maintenance manuals.
  - j. Compliance with recognized trade association standards.
  - k. Compliance with recognized testing agency standards.
  - l. Application of testing agency labels and seals.
  - m. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
- 1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Shopwork manufacturing instructions.
    - f. Templates and patterns.
    - g. Schedules.
    - h. Design calculations.
    - i. Compliance with specified standards.
    - j. Notation of coordination requirements.
    - k. Notation of dimensions established by field measurement.
  - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.
- D. Samples: Prepare physical units of materials or products, including the following:
- 1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Include cost and wearing capability of each color and pattern.
  - 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
  - 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineer's sample where so indicated. Attach label on unexposed side that includes the following:
    - a. Generic description of Sample including type, quality or grade designation.



- b. Product name or name of manufacturer.
  - c. Sample source.
  - d. Name of Project.
  - e. Name of Contractor or subcontractor.
4. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
- a. Size limitations.
  - b. Compliance with recognized standards.
  - c. Availability.
  - d. Delivery time.
5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
- a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least two sets of paired units that show approximate limits of the variations.
  - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, detail's of assembly, connections, operation, and similar construction characteristics.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
  - b. Samples not incorporated into the Work, or otherwise not designated as The Town of West Warwick's property, are the property of Contractor.
- E. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location.
- F. Delegated-Design Submittal: Comply with requirements in Division 1 Section "Quality Requirements."
- G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.

## 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit four copies of each submittal, unless otherwise indicated.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and the Town of West Warwick's, and other information specified.
- C. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- D. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- E. Material or Product Certificates: Prepare written statements on manufacturer's letterhead certifying that material or product complies with requirements. Use attached sample Material Certificate, or provide certificate that includes the following information.
1. Project to which material is consigned.
  2. Name of contractor receiving material.
  3. Item number and description of material.
  4. Quantity of material represented by the certificate.
  5. Means of identifying consignment including label, marking, or lot number.
  6. Date and method of shipment.
  7. Signature of Supplier's authorized agent.
  8. Notarization of certificate.
- F. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- G. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- H. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

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

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

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

### 3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and submittal transmittal and will return them without action.
  - 1. Engineer may elect not to review partial or incomplete submittals and will return such submittals with no action taken.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. Furnish as Submitted: Submittal appears to conform to Contract Documents and Contractor may proceed with ordering and installation.
  - 2. Furnish as Noted: Same as "Furnish as Submitted" accept that the Contractor must comply with modifications or notes added to the submittal by the Engineer.
  - 3. Rejected: Submittal must be revised and resubmitted.
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

### 3.3 CONSTRUCTION SCHEDULE

- A. The general recommended sequence of construction operations is indicated within the "General Construction Sequence and Roadway Closure" section within the Contract Drawings. Construction activities shall generally be limited one street/roadway at a time.
- B. The Contractor shall provide his own detailed construction schedule to the Engineer prior to the initiation of Work.
  - 1. Schedule of Construction. The Contractor shall submit his proposed schedule of construction (schedule of operations) to the Owner at the earliest possible time, and no later than 10 days prior to beginning the Work or at the pre-construction conference, whichever is earlier.
    - a. Provide a bar-chart-type or Gantt-chart-type schedule that clearly indicates the start date and duration of specific construction activities. The Contractor shall not work on Saturday, Sunday, or Holidays without approval of the Owner. Portions of the Work to be performed by subcontractors, the Owner or utilities shall be clearly indicated as such.
    - b. Incorporate the erosion control provisions into the construction schedule.
    - c. No work shall be started until the schedule of construction is reviewed and approved by the Owner.
    - d. Contract completion date shall not be changed by submission of a schedule, unless specifically authorized by Change Order approved by the Owner.

2. Deviation from Contractor's schedule will require the Contractor to submit notification of such change in schedule to the Engineer at least seven (7) days prior to the subject change. Such notification shall be accompanied by a revised project schedule.

### 3.4 SCHEDULE OF VALUES

- A. In addition to the submittals required by the various Technical Specifications, provide the following submittals:
  1. Schedule of Values. Within 10 days after signing the Contract, submit a schedule of values of the various portions of the Work, including quantities and a complete breakdown of the contract price, and supported by such data to substantiate its correctness as the Engineer may require. Each item in the schedule of values shall include its proper share of overhead and profit. This schedule, when accepted and approved by the Owner and Engineer, shall only be used as a basis for Contractor's Periodic Estimate. No payments will be made to Contractor until such Schedule has been submitted and accepted.
    - a. Within 10 days after signing the Contract, submit a Cash Flow Schedule including estimated monthly payment schedule for the Project.
    - b. Break prices down sufficiently to provide a convenient and realistic means for determining the amount of Work done during various stages of progress. Where prices are not broken down sufficiently to accurately determine the value of Work completed, the Engineer will estimate the value of the Work completed and will deduct an amount so as to arrive at a conservative value which will allow the Owner to easily complete the Work with the unpaid balance. When the required detail in the Schedule of Values is not provided by the Contractor, Contractor agrees to accept the Engineer's determinations.

END OF SECTION

## SECTION 01332 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.
- B. Related Requirements:
  - 1. Division 2 Section "Site Clearing" for photographic documentation before site clearing operations commence.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs.
  - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight, commercial-grade photographic paper; punched for standard three-ring binder.
  - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and contact information for photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.
  - 3. Transcript: Prepared on 8-1/2-by-11-inch (215-by-280-mm) paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

## PART 2 - PRODUCTS

### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400pixels.

## PART 3 - EXECUTION

### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.
  - 2. Field Office Images: Maintain one set of images accessible at Project site, available at all times for reference. Identify images in the same manner as those submitted to Engineer.
- C. Preconstruction Photographs: Before commencement of excavation and demolition activities, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer and discussed in Division 2 Specification "Earthwork."
  - 1. Take a minimum of 20 photographs to show existing conditions within and adjacent to Project Site before starting the Work including photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
  - 2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Periodic Construction Photographs: Take a minimum of 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Final Completion Construction Photographs: Take a minimum of 20 color photographs (per roadway) after date of Substantial Completion for submission as project record documents.

END OF SECTION

## SECTION 01400 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

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

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

#### 1.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.



1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority. Testing laboratories shall be South Carolina Department of Transportation Certified material testing laboratories. The Contractor shall provide a current organizational chart including names, telephone numbers and current certifications of personnel responsible for the Quality Control Program, testing, inspection, etc. on the project at the Pre-Construction Meeting. All tests performed shall be under the supervision of certified personnel or it may result in nonpayment, delay and/or reduction in payment for the material of concern.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
  2. Description of test and inspection.
  3. Identification of applicable standards.
  4. Identification of test and inspection methods.
  5. Number of tests and inspections required.
  6. Time schedule or time span for tests and inspections.
  7. Entity responsible for performing tests and inspections.
  8. Requirements for obtaining samples.
  9. Unique characteristics of each quality-control service.
- D. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Ambient conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- E. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

#### 1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Testing Agency Qualifications: An agency as defined in Division 1 Section "Testing Laboratory Services"

#### 1.7 QUALITY CONTROL

- A. Owner's Responsibilities: Where quality-control services are indicated as the Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ the same entity engaged by the Owner, unless agreed to in writing by the Owner.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- E. Testing Agency Responsibilities: Adhere to Division 1 Section "Testing Laboratory Services.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections, at site or at source of products, including storage and curing of test samples.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field-curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall manage and coordinate all material testing and sequencing of activities to avoid the necessity of removing and replacing construction work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections, testing, taking samples, and similar activities and shall be responsible for ensuring all tests are performed in accordance with the Contract Documents and South Carolina Department of Transportation Standard Specifications for Highway Construction, latest edition and the supplemental specifications. The City Inspector may require the Contractor to perform additional testing of questionable materials and/or construction methods for verification that the resulting product(s) meets the required specifications at no cost to the Owner. Failure to comply with this requirement may result in non-payment, delay and/or reduction of payment. Decisions regarding acceptance, rejection or acceptance at an adjusted price will be based on the material testing results that are within the specification limits.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
  - 2. Repair items of work where testing indicates that the work does not meet requirements specified herein and retest at no cost to the Owner.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.
- D. If testing, inspection and/or approval reveal that portions of the work fail and/or do not comply with the Contract Documents, all cost for the correction and re-testing of the work shall be borne by the Contractor.

END OF SECTION

SECTION 01410 - TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section consists of requirements for the services of Independent Testing Laboratories to perform specified testing of work and materials at the Project site or at point of manufacture.

1.2 REQUIREMENTS

- A. The Contractor shall cooperate with the Owner's selected testing agency and all others responsible for testing and inspecting the work.
- B. The Contractor shall provide other testing and inspecting as are specified to be furnished by the Contractor in this Section and /or elsewhere in the Contract Documents. Laboratories shall also meet qualifications listed in Division 2 Sections for the types of testing to be conducted.

1.3 RELATED WORK

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.
- B. Requirements for testing may be describe in various Sections of these specifications.
- C. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described in this Section.

1.4 WORK NOT INCLUDED

- A. Selection of the testing laboratory: The Owner will select a prequalified independent testing laboratory.
- B. Payment for initial testing: The Owner will pay for all initial services of the testing laboratory as further described in Article 2.1 of this Section.
- C. Tests at point of manufacture as specified in other Sections of these documents are to made with all costs borne by the Contractor.

1.5 QUALITY ASSURANCE

- A. The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329.
- B. Testing when required, will be in accordance with all pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials.

1.5 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01600.

- B. Promptly process and distribute required copies of test reports and related instruction to assure necessary retesting and replacement of materials with the least possible delay in progress of the work.

## PART 2 - PRODUCTS

### 2.1 PAYMENT FOR TESTING

- A. Initial services:
  - 1. The Owner will pay for initial testing services requested by the Owner.
  - 2. When initial tests indicated non-compliance with the Contract Documents, the costs of initial test associated with that non-compliance will be deducted by the Owner from the Contract Sum.
  - 3. Retesting: When initial tests indicated non-compliance with the Contract Documents, subsequent re-testing occasioned by the non-compliance shall be performed by the same testing agency and all costs there from will be deducted by the Owner from the contract sum.

### 2.2 CODE COMPLIANCE TESTING

- A. Inspections and tests required by codes or ordinances, or by a plan approval authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

### 2.3 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspections and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

## PART 3 - EXECUTION

### 3.1 COOPERATION WITH TESTING LABORATORY

- A. Representatives of the testing laboratory shall have access to the work at all times and at all locations where the work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

### 3.2 TAKING SPECIMENS

- A. All specimens and samples for testing, and deliveries to laboratory, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

### 3.1 SCHEDULES FOR TESTING

- A. Establishing the schedule:

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
  2. Provide all required time within the construction schedule.
- B. Revising schedule: When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.
- C. Adherence to schedule: When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the work, all extra charges for testing attributable to the delay by be back-charged to the Contractor and shall not be borne by the Owner.

END OF SECTION

SECTION 01420 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- G. "Experienced": When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- H. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.



### 1.3 INDUSTRY STANDARDS

- A. **Applicability of Standards:** Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. **Publication Dates:** Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. **Conflicting Requirements:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
  - 1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.
- D. **Copies of Standards:** Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
- E. **Abbreviations and Acronyms for Standards and Regulations:** Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board <a href="http://www.access-board.gov">www.access-board.gov</a>	(800) 872-2253 (202) 272-5434
ANSI Z260.1	Nursery Stock, latest edition, published by the American Association of Nurserymen, Inc. (AAN).	
CFR	Code of Federal Regulations Available from Government Printing Office <a href="http://www.access.gpo.gov/nara/cfr">www.access.gpo.gov/nara/cfr</a>	(888) 293-6498 (202) 512-1530
CRD	Handbook for Concrete and Cement Available from Army Corps of Engineers Waterways Experiment Station <a href="http://www.wes.army.mil">www.wes.army.mil</a>	(601) 634-2355

DOD	Department of Defense Specifications and Standards Available from Defense Automated Printing Service <a href="http://www.astimage.daps.dla.mil/online">www.astimage.daps.dla.mil/online</a>	(215) 697-6257
FED-STD	Federal Standard (See FS)	
FS	Federal Specification Available from Defense Automated Printing Service <a href="http://www.astimage.daps.dla.mil/online">www.astimage.daps.dla.mil/online</a>	(215) 697-6257
	Available from General Services Administration <a href="http://www.fss.gsa.gov/pub/fed-specs.cfm">www.fss.gsa.gov/pub/fed-specs.cfm</a>	(202) 619-8925
	Available from National Institute of Building Sciences <a href="http://www.nibs.org">www.nibs.org</a>	(202) 289-7800
FTMS	Federal Test Method Standard (See FS)	
MILSPEC	Military Specification and Standards Available from Defense Automated Printing Service <a href="http://www.astimage.daps.dla.mil/online">www.astimage.daps.dla.mil/online</a>	(215) 697-6257
RCRA	Resource Conservation Recovery Act	
SPN	“Standardized Plant Names,” latest edition, by the American Joint Committee on Horticultural Nomenclature.	
UFAS	Uniform Federal Accessibility Standards Available from Access Board <a href="http://www.access-board.gov">www.access-board.gov</a>	(800) 872-2253 (202) 272-5434

#### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The) <a href="http://www.aluminum.org">www.aluminum.org</a>	(202) 862-5100
AAADM	American Association of Automatic Door Manufacturers	(216) 241-7333

	www.aadm.com	
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AAN	American Association of Nurserymen (See ANLA)	
AASHTO	American Association of State Highway and Transportation Officials www.aashto.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) www.aatcc.org	(919) 549-8141
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	American Concrete Institute/ACI International www.aci-int.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AFPA	American Forest & Paper Association (See AF&PA)	
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association www.hardboard.org	(847) 934-8800
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960

AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America www.alca.org	(800) 395-2522 (703) 736-9666
ALSC	American Lumber Standard Committee	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANLA	American Nursery & Landscape Association (Formerly: AAN - American Association of Nurserymen) www.anla.org	(202) 789-2900
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOAC	Association of Official Agricultural Chemists	(800) 379-2622
AOSA	Association of Official Seed Analysts www.aosaseed.com	(505) 522-1437
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(941) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ASCA	Architectural Spray Coaters Association www.ascassoc.com	(609) 848-6120
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and	(800) 527-4723

	Air-Conditioning Engineers <a href="http://www.ashrae.org">www.ashrae.org</a>	(404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) <a href="http://www.asme.org">www.asme.org</a>	(800) 843-2763 (212) 591-7722
ASSE	American Society of Sanitary Engineering <a href="http://www.asse-plumbing.org">www.asse-plumbing.org</a>	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) <a href="http://www.astm.org">www.astm.org</a>	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industries International) <a href="http://www.awci.org">www.awci.org</a>	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (See WCMA)	
AWI	Architectural Woodwork Institute <a href="http://www.awinet.org">www.awinet.org</a>	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association <a href="http://www.awpa.com">www.awpa.com</a>	(817) 326-6300
AWS	American Welding Society <a href="http://www.aws.org">www.aws.org</a>	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association <a href="http://www.awwa.org">www.awwa.org</a>	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association <a href="http://www.buildershardware.com">www.buildershardware.com</a>	(212) 297-2122
BIA	Brick Industry Association (The) <a href="http://www.bia.org">www.bia.org</a>	(703) 620-0010
CLFMI	Chain Link Fence Manufacturers Institute <a href="http://www.chainlinkinfo.org">www.chainlinkinfo.org</a>	(301) 596-2583
CPPA	Corrugated Polyethylene Pipe Association <a href="http://www.cppa-info.org">www.cppa-info.org</a>	(800) 510-2772 (202) 462-9607
CRSI	Concrete Reinforcing Steel Institute <a href="http://www.crsi.org">www.crsi.org</a>	(847) 517-1200
CSI	Construction Specifications Institute (The) <a href="http://www.csinet.org">www.csinet.org</a>	(800) 689-2900 (703) 684-0300

FM	Factory Mutual System (See FMG)	
FMG	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
GRI	Geosynthetic Research Institute www.drexel.edu/gri	(215) 895-2343
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NFPA	National Fire Protection Association www.nfpa.org	(800) 344-3555 (617) 770-3000
NLGA	National Lumber Grades Authority www.nlga.org/	(604) 524-2393
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
RFCI	Resilient Floor Covering Institute www.rfci.com	Contact by mail only
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
SAE	SAE International www.sae.org	(724) 776-4841
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TPI	Truss Plate Institute	(608) 833-5900

TPI	Turfgrass Producers International www.turfgrassod.org	(800) 405-8873 (847) 705-9898
UL	Underwriters Laboratories Inc. www.ul.com	(800) 704-4050 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. www.bocai.org	(708) 799-2300
CABO	Council of American Building Officials (See ICC)	
IAPMO	International Association of Plumbing and Mechanical Officials (The) www.iapmo.org	(909) 595-8449
ICBO	International Conference of Building Officials www.icbo.org	(800) 284-4406 (562) 699-0541
ICC	International Code Council, Inc. (Formerly: CABO - Council of American Building Officials) www.intlcode.org	(703) 931-4533
SBCCI	Southern Building Code Congress International, Inc. www.sbcci.org	(205) 591-1853

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ARRA	American Recovery and Reinvestment Act	
EPA	Environmental Protection Agency	(202) 260-2090

[www.epa.gov](http://www.epa.gov)

GSA	General Services Administration <a href="http://www.gsa.gov">www.gsa.gov</a>	(202) 708-5082
HUD	Department of Housing and Urban Development <a href="http://www.hud.gov">www.hud.gov</a>	(202) 708-1112
NCHRP	National Cooperative Highway Research Program (See TRB)	
OSHA	Occupational Safety & Health Administration <a href="http://www.osha.gov">www.osha.gov</a>	(800) 321-6742 (202) 693-1999
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
TRB	Transportation Research Board <a href="http://www.nas.edu/trb">www.nas.edu/trb</a>	(202) 334-2934
USDA	Department of Agriculture <a href="http://www.usda.gov">www.usda.gov</a>	(202) 720-2791
USPS	Postal Service <a href="http://www.usps.com">www.usps.com</a>	(202) 268-2000

- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web-site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

SCDHEC	South Carolina Department of Health & Environmental Control <a href="http://www.scdhec.gov">www.scdhec.gov</a>	(803) 898-3432
SCDOT	South Carolina Department of Transportation <a href="http://www.scdot.org">www.scdot.org</a>	(855) 467-2368

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION



## SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for safety, protection facilities, temporary utilities, support facilities, and termination/removal of protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Sanitary facilities and drinking-water facilities.
- C. Support facilities include, but are not limited to, the following:
  - 1. Dewatering facilities and drains.
  - 2. Waste disposal facilities.
- D. Related Sections:
  - 1. Division 1 Section "Summary" for limitations on work restrictions and utility interruptions.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, staging areas, and parking areas for construction personnel.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 SAFETY

- A. The Contractor shall comply with all requirements of the most recent version of the Occupational Safety and Health Act (OSHA).
- B. When any support system is used that requires design by an engineer, copies of the design stamped by a Professional Engineer registered in South Carolina shall be submitted to the Engineer.
- C. The Contractor has full responsibility to comply with all provisions of the State of South Carolina Public General Statutes concerning Occupational Safety and Health. Any fines levied against the Contractor for violations shall be the Contractor's responsibility.

### 3.2 PROTECTION FACILITIES

- A. The Contractor shall at all times take reasonable and proper precautions to protect and safeguard the Owner's, public and private property, including his own work and all materials of every description both before and after use in the work, from damage or injury or loss in connection with this contract. The Contractor shall also (at all times) take reasonable and proper precautions to protect and safeguard persons and animals, and must maintain public safety during execution of this contract.
- B. The Contractor shall assume full responsibility for the protection of all public or private buildings, structures and utilities in the streets, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from damage of every description and any such damage thereto shall be repaired or otherwise made good by the Contractor, at his expense, in a manner acceptable to the Engineer.
- C. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. The Contractor shall, at the Contractor's own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. The length or size of excavation will be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by the Engineer.
- D. The Contractor shall proceed with caution when performing excavation of any kind so that the exact location of underground structures, both known and unknown, may be determined so as to not damage or disturb existing underground or above ground utilities. The Contractor must protect and support all utilities during execution of the work. There may be above ground and underground utilities in the designated work area; existing lines may not be shown on the plans. The approximate position of certain underground utilities is shown on the plans for information only. The Contractor shall locate these and other possible unknown utility lines by use of an electronic pipe finder, test pits, or other means deemed acceptable by the Engineer. The Contractor shall then excavate and expose all existing underground lines in advance of any excavation work under this contract. When the Contractor has located all utilities, he shall be responsible for planning and coordinating the required work around the existing utilities.
- E. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - 1. Comply with work restrictions specified in Division 1 Section "Summary."
- F. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- G. Barricades, Warning Signs, and Lights: Comply with Contract Drawings and the requirements of the City of Columbia, OSHA, and the South Carolina Department of Transportation for erecting structurally adequate barricades, including warning signs and lighting.
- H. Access: Maintain access to existing on site facilities as indicated and as required by authorities having jurisdiction. The Contractor must, as far as practical and consistent with good construction, permit access to private and public property and leave fire hydrants, catch basins, streets, etc., free from encumbrances.

### 3.3 TEMPORARY UTILITY INSTALLATION

- A. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

### 3.4 SUPPORT FACILITIES INSTALLATION

- A. Waste Management: Comply with requirements specified in the Project's Stormwater Pollution Prevention Plan (SWPPP). All waste materials will be collected on site, and transported and stored in securely covered containers. The containers will meet all local and state solid waste management regulations and shall be sized to adequately handle wastes from construction operations. All contractors will utilize the services of a licensed solid waste management company.

### 3.5 TERMINATION AND REMOVAL

- A. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
- B. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."
- C. The Contractor must restore, replace or make good at his own expense, unless such was caused directly by errors contained in the Contract, by the Owner, or its duly authorized representatives, any and all damage, loss, or injury to persons, animals, and/or property caused by any negligence of omission or commission on his part or on the part of his agent, including sidewalks, curbing, sodding, pipes, conduits, sewers, buildings, fences, retaining walls, tanks, power lines, or any other private or public property to a condition of equal or better comparison to the condition of the property when he entered upon the work.
- D. In case of failure on the part of the Contractor to restore such property or make good such damage, the Owner may upon forty-eight (48) hours notice proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any money due or which may become due under this contract.
- E. The Contractor shall indemnify and hold harmless the Owner or the Engineer acting in behalf of the Owner from all suits and actions that may be brought against it by reason of any injury, or alleged injury, to the person or property of another resulting from negligence or carelessness in the execution of the work, or on account of any negligent act or omission, or improper methods or means of construction on the part of the Contractor, his representatives, or employees.

END OF SECTION

## SECTION 01572 – TEMPORARY EROSION AND SEDIMENTATION CONTROL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes furnishing, placing, and maintaining erosion and sedimentation control measures as shown on the Contract Drawings, as directed by the Engineer, and where necessary to reduce sediment content of runoff. Measures include the following:
  1. Silt fence.
  2. Construction entrance.
  3. Dust control.
  4. Erosion control blanketing (to be installed on detention basin side slope areas).

#### 1.3 SUBMITTALS

- A. Product Data
  1. Silt fence materials.
  2. Construction entrance stone and geotextile fabric.
  3. Dust control.
  4. Erosion control blanket.

#### 1.4 QUALITY ASSURANCE

- A. Where "Standard Specifications" is used, it shall mean "State of South Carolina Department of Transportation Standard Specifications for Highway Construction," 2007 Edition and amendments.
- B. Sedimentation and erosion control measures shall be installed and maintained in accordance with the Drawings and the "South Carolina Department of Health and Environmental Control (SCDHEC) Stormwater Management BMP Handbook (2005)."

#### 1.5 DEFINITIONS

- A. Control System: Single or group of practices that prevent detachment and interrupt the transport of soil by rainfall, stormwater runoff, melting snow or ice.

### PART 2 - PRODUCTS

#### 2.1 CONTROL SYSTEM

- A. Silt Fence. Shall be in accordance with Section 815.2.5 of the Standard Specifications.

1. Synthetic Filter Fabric: Woven geotextile, 36 inches maximum height, conforming to the following:

<u>Properties</u>	<u>Requirement</u>	<u>Unit</u>
Grab Tensile Strength (ASTM D4632):	90	Lbs
Grab Tensile Elongation (ASTM D4632):	<50%	Percent
Maximum Apparent Opening Size (ASTM D4751):	0.60	Mm (max.)
Permittivity (ASTM D4491):	0.05	Per Second
UV Resistance(at 500 hours) (Retained strength) (ASTM D4355):	70	Percent

2. Product and Manufacturer:
  - a. Provide silt fence filter fabric listed within the most recent edition of the SCDOT Qualified Product List 34;
  - b. Or equal.
3. Posts. Shall be steel, a minimum of 60 inches long, and shall meet the minimum physical requirements as specified in Subsection 815.2.12 of the Standard Specifications.
4. Silt fence fasteners. Shall consist of heavy duty plastic ties that are evenly spaced and placed in a manner to prevent sagging or tearing of the fabric.

B. Construction Entrance

1. Stone. Shall be No. 1 aggregate in accordance with Subsection 815.2.9 of the Standard Specifications conforming to following gradation:

Nominal Size (Sieves with Square Openings)	Percent Passing
4 Inch	100
3 ½ Inch	90-100
2 ½ Inch	25-60
1 ½ Inch	0-15
¾ Inch	0-5

2. Non-woven geotextile fabric. Shall meet the requirements of Subsection 804.2.11 of the Standard Specifications.

C. Dust Control

1. Calcium Chloride: ASTM D98, Type 1 or Type 2.
2. Water: Potable.

D. Erosion Control Blanket

1. Erosion Control Blankets shall consist of 100% wheat straw mechanically bound and covered on both sides by netting. The straw shall be homogeneously blended and evenly

distributed throughout the blanket. The netting shall be photodegradable polypropylene with mesh openings of approximately 3/8 in. by 3/8 in. The blanket shall be considered to be short-term and degradable within 1 year subsequent to installation.

2. Erosion control blanket shall meet or exceed the properties of Landlok S2 as manufactured by Propex Operating Company, LLC or EroNet S150 as manufactured by North American Green.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Minimize environmental damage during construction. Prevent exposure of fuel, oil, lubricants, other fluids, and construction debris.
- B. Install erosion and sediment control measures prior to clearing, demolition or construction.
- C. Implement and maintain the erosion and sediment control notes on the Contract Drawings. Inform parties engaged on the construction site of the requirements and objectives of the plan.
- D. Construct erosion and sediment control measures in accordance with the Standard Specifications, the SCDHEC Stormwater Management BMP Manual, and as indicated on the Contract Drawings.
  1. Attend a preconstruction meeting with the Engineer, to review permit conditions and construction methods.
  2. Construct erosion and sediment control measures in accordance with all project permits.
  3. Provide additional sedimentation and erosion controls if deemed necessary by the Engineer, City, or State to address field conditions.
  4. Inspect site weekly and prior to any anticipated rain event. Ensure that erosion controls are properly maintained and functioning.
  5. Supply a 24-hour contact name and number as part of the erosion control plan.
- E. Remove and dispose of sediment from control structures.
- F. Install additional control measures, if deemed necessary by the Engineer, City, or Owner.
- G. Stockpiles
  1. Side Slopes: 2:1 maximum.
  2. Surround stockpiles by a sediment barrier.
  3. Stabilize stockpiles left bare for more than 15 days with temporary vegetation or mulch.
- H. Control dust and wind erosion. Control dust to prevent a hazard to traffic on adjacent roadways. Dust control includes, but is not limited to, sprinkling of water, uniform application of calcium chloride, and/or crushed stone on exposed soils and haul roads. Dust control shall be provided daily or more often by the application of water. Care shall be taken to prevent over-watering, which may result in runoff or erosion. Care will be taken to spray additional areas of exposed soil as necessary during windy periods. Only the minimum amount of water will be used; no runoff will result from this practice. Calcium chloride (if utilized) shall be applied by mechanical spreaders as

loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage.

- I. Within 7 days of completing detention basin slope construction or drainage swale construction:
  1. Stabilize basin slopes with vegetation and erosion control blanketing to minimize exposure. Install erosion control blanketing in accordance with manufacturer's recommendations.
  2. Stabilize swale channel bottom and slopes with vegetation and matting or engineered turf system (as indicated on the Contract Drawings) to minimize exposure.
- J. If final grading is delayed for more than 30 days after land disturbances cease, stabilize soils with temporary vegetation or mulch.

### 3.2 CONTROL SYSTEM

- A. Silt Fence
  1. Install fencing at locations indicated on the Drawings or where directed by the Engineer. Install in accordance with the Standard Specifications and Drawings.
  2. Install bottom 12 inches of fabric by trenching and burying the fabric into the ground.
  3. Drive posts into ground a minimum of 24 inches.
  4. Locate fabric splices at posts only. Provide 6-inch overlap and seal.

### 3.3 MAINTENANCE

- A. Control System
  1. Erosion control measures shall be inspected and maintained as indicated on the Contract Drawings and within the Project's SWPPP. In general, the control system shall be inspected immediately after each rainfall and daily during prolonged rainfall. At minimum, control system must be inspected at least once every seven (7) calendar days. Make repairs immediately.
  2. Remove and dispose of accumulated sediments when sediment reaches approximately one-third the height of the silt fencing, or when directed by the Engineer.
  3. Replace control system promptly if fabric decomposes or system becomes ineffective prior to the expected usable life.
  4. Maintain or replace system until no longer necessary for the intended purpose.
- B. Construction Entrance
  1. Maintain in good condition throughout construction period.
  2. Sweep adjacent roadways daily to remove tracked material from pavement.

### 3.4 REMOVAL

- A. Remove and dispose control systems and construction entrance after disturbed areas have been satisfactorily stabilized with vegetation, or as directed by the Engineer. Permanently stabilize disturbed areas resulting from fence removal. The fence materials remain the property of the Contractor.

END OF SECTION



## SECTION 01600 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

#### 1.2 DEFINITIONS

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

### 1.3 SUBMITTALS

- A. Substitution Requests: Submit four copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
    - c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - d. Samples, where applicable or requested.
    - e. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - f. Summary of impacts to Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
    - g. Cost information, including a proposal of change, if any, in the Contract Sum.
    - h. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
    - i. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  2. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within 7 working days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 10 working days of receipt of request, or 7 working days of receipt of additional information or documentation, whichever is later.
    - a. Form of Acceptance: Change Order.
    - b. Use product specified if Engineer cannot make a decision on use of a proposed substitution within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: Forms are included with the Specifications. Prepare a written document using appropriate form properly executed.
  3. Refer to Division 2 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT OPTIONS

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Engineer will make selection.
  5. Where products are accompanied by the term "match sample," sample to be matched is Engineer's.
  6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
  7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures: Procedures for product selection include the following:
1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.
    - a. Substitutions may be considered, unless otherwise indicated.
  2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.
    - a. Substitutions may be considered, unless otherwise indicated.
  3. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

- a. Substitutions may be considered, unless otherwise indicated.
4. Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
5. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
  - a. Substitutions may be considered, unless otherwise indicated.
6. Allowances: Refer to individual Specification Sections for allowances that control product selection and for procedures required for processing such selections.

## 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Engineer will consider requests for substitution if received within 30 calendar days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Engineer.
- B. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
  1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  2. Requested substitution does not require extensive revisions to the Contract Documents.
  3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  4. Substitution request is fully documented and properly submitted.
  5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  7. Requested substitution is compatible with other portions of the Work.
  8. Requested substitution has been coordinated with other portions of the Work.
  9. Requested substitution provides specified warranty.
  10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

## 2.3 COMPARABLE PRODUCTS

- A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:
1. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  2. Evidence that proposed product provides specified warranty.
  3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  4. Samples or other documentation proving equal substitution or compliance with Drawings and Technical Specifications, if requested.

PART 3 - EXECUTION (Not used)

END OF SECTION

## SECTION 01770 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project Record Documents including As-Built Drawings.
  - 3. Final cleaning.
- B. Related Sections:
  - 1. Divisions 2 through 16 Sections for specific requirements for project record documents of the Work in those Sections.
  - 2.

#### 1.3 CLOSEOUT SUBMITTALS

- A. As-Built Drawings: Comply with the following:
  - 1. Number of Copies: Submit two copies of draft As-Built Drawings.
  - 2. Submit copies of draft As-Built Drawings as follows:
    - a. Initial Submittal: Submit one set of As-Built Drawings to Engineer and/or Owner for review in addition to a PDF electronic file. Engineer will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Engineer will return plots and prints for organizing into sets, printing, binding, and final submittal.
    - b. Final Submittal: Submit two sets of As-Built Drawings in addition to one digital electronic file. Plot and print each Drawing, whether or not changes and additional information were recorded stamped, signed and dated by a registered surveyor licensed to practice in the state of South Carolina certifying that all locations, dimensions and facilities are accurately shown or indicated on the As-Built Drawings. Coordinates on the as-built drawings shall be based on South Carolina State Plane Coordinate System: NAVD 88 Vertical Control and NAD 83 Horizontal Control. The Contractor shall provide the Engineer with a digital file including locations and elevations on a CD in which the data can be downloaded into the City of Columbia's GIS map and CAD file.

B. Record Product Data: Submit one copy of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

#### 1.4 CLOSEOUT PROCEDURES

A. Submit a written certification that the Contract Documents have been reviewed, the Work has been inspected, and that the Work is complete in accordance with the Contract Documents and is ready for the Engineer's review.

B. Provide submittals to Engineer that are required by authorities having jurisdiction.

C. Provide submittals to Engineer that are required by authorities having jurisdiction, including the following closeout documents:

1. AIA Document G706 - Contractor's Affidavit of Payment of Debts and Claims, 1994 Edition.
2. AIA Document G706A - Contractor's Affidavit of Release of Liens, 1994 Edition.
3. AIA Document G707 - Consent of Surety to Final payment, 1994 Edition.

D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

#### 1.5 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, he shall submit to the Engineer:

1. A list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Engineer will review the Contractor's certification and examine the Work for conformance to the Substantial Completion Certification and the Contract Documents.
4. Submit specific warranties, workmanship bonds, maintenance service agreements (if applicable), final certifications, and similar documents.
5. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities.
6. Contractor shall remedy the deficiencies in the Work within seventy-two (72) hours, and send a second written notice of substantial completion to the Engineer.
7. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
8. Engineer will re-examine the Work.

B. When Engineer finds that the Work is substantially complete, the Engineer will:

1. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended.
2. Distribute to Contractor, Engineer, and Owner for their written acceptance of the responsibilities assigned to them in the Certificate.

C. After Work is substantially complete, Contractor shall:



1. Complete Work listed for completion or correction within designated form.
2. Perform all cleaning in accordance execution requirements noted below.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit four (4) copies of the punch list of incomplete items. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Include the following information at the top of each page:
  - a. Project name
  - b. Date
  - c. Name of Engineer
  - d. Name of Contractor
  - e. Page number

1.7 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment.
  2. Submit photographs as required.
  3. Submit As-Built Drawings, stamped, signed and dated by a registered surveyor licensed to practice in the state of South Carolina.
  4. Submit all material testing results including tests that failed along with follow up tests showing that the materials passed.
  5. Submit all records as required in the Contract Documents in binders that are labeled with the project name, date, subject matter of contents and/or identification for easy reference. Records shall include, but not be limited to, specific warranties, workmanship bonds, certifications, product data and installation information, deviations in products installed on the project, and any other information associated with the work.
  6. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  8. Submit the following to the City of Columbia prior to the City releasing final payment and retainage:
    - a. An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the project for which the City or the City's property might be responsible or encumbered (less amounts withheld by the City) have been paid or otherwise satisfied.
    - b. 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 City.

- c. 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.
  - d. Consent of surety, if any, to final payment.
  - e. 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 City. Final acceptance of the work will not be granted and the retained percentage will not be due or payable until the Contractor has furnished the City proper and satisfactory evidence under oath that all claims for labor and material employed or used in the construction of the work under this contract have been settled, and that no legal claims can be filed against the City for such labor or materials.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will notify Contractor of construction that must be completed or corrected before final payment will be issued.
- 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.8 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by the responsible subcontractors, suppliers, and manufacturers, within 10 days after the completion of the applicable item of work.
- B. Execute and assemble the transferable warranty documents and bonds from the subcontractors, suppliers, and manufacturers.
- C. Verify that the documents are in the proper form, contain full information, and are notarized.
- D. Co-execute the submittals when required.
- E. Include a Table of Contents and assemble in a three ring binder with a durable plastic cover.
- F. Submit prior to the final Application for Payment.
- G. Time of Submittals:
  - 1. For equipment or component parts of equipment put into service during construction with the Owner's permission, submit the documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after the Date of Substantial Completion, prior to the final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond the Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

#### 1.9 PROJECT RECORD DOCUMENTS

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

- B. Newly Prepared As-Built Drawings: Prepare new Drawings instead of preparing As-Built Drawings where Engineer determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
  - 1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
  - 2. Consult with Engineer for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared As-Built Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT AS-BUILT DRAWING" in a prominent location.
  - 1. Record Prints: Organize Record Prints and newly prepared As-Built Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Identification: As follows:
    - a. Project name
    - b. Date
    - c. Designation "PROJECT AS-BUILT DRAWINGS"
    - d. Name of Engineer
    - e. Name of Contractor
- D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

## PART 2 - PRODUCTS

### 2.1 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders, As-Built Drawings, and Product Data where applicable.

### 2.2 AS-BUILT DRAWINGS

- A. Preparation: As-Built Drawings shall reflect the actual installation.
  - 1. Content: Types of items to be included on As-Built Drawings include, but are not limited to, the following:

- a. Locations of new and/or relocated above-grade site improvements including but not limited to, manholes, reconstructed/replaced overflow structures, limits of new reinforced swale, and irrigation system.
- b. Locations, sizes, and depths (inverts) of existing and new subsurface improvements.

### 2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.
  1. Include miscellaneous record submittals directory organized by specification section number and title, electronically linked to each item of miscellaneous record submittals.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning:
  1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean areas disturbed by construction activities, of rubbish, surplus soil, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - d. Remove debris from limited access spaces, including trenches, equipment vaults, manholes, and similar spaces.
    - e. Leave Project clean and ready for use.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury stumps, debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials unlawfully. Remove waste materials from Project site and dispose of lawfully.
- D. If the Contractor fails to clean up, the Owner may do so and the cost thereof will be charged to the Contractor.

3.2 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

END OF SECTION

## SECTION 02230 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Removing above- and below-grade site improvements.
5. Disconnecting and removing site utilities.
6. Temporary erosion- and sedimentation-control measures.

- B. Related Sections:

1. Division 1 Section "Temporary Erosion and Sedimentation Control" for temporary erosion- and sedimentation-control measures.
2. Division 1 Section "Execution Requirements" for field engineering and surveying.

#### 1.3 DEFINITIONS

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials and existing stockpiles of rubble and spoils shall become Contractor's property and shall be removed from Project site.

## 1.5 SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or videotape.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

## 1.6 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.

## 1.7 PROJECT CONDITIONS

- A. Improvements within Property: Existing site is shared with the contractor for the Alumni House which is used as a staging area. This part of the site is currently fenced off and must remain intact. Do not obstruct access or damage the fencing. As soon as possible contractor shall remove existing stockpiles, carry out grading and removed excess soil so that additional property can be turned over to staging use by others.
- B. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- C. Utility Locator Service: Notify PUPS – SC811 at least three full working days before site clearing or excavation for utility mark out.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.
- E. Soil Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 2 Section "Earthwork."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain [Wrap a 1-inch (25-mm) blue vinyl tie tape flag around each tree trunk at 54 inches (1372 mm) above the ground.
- C. Protect existing site improvements to remain from damage during construction.
  1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

### 3.3 TREE AND PLANT PROTECTION

- A. General: Protect trees and plants remaining on-site along street from all damage from construction operations. The following practices are prohibited within protection zones:
  1. Storage of construction materials, debris, or excavated material.
  2. Parking vehicles or equipment.
  3. Foot traffic.
  4. Erection of sheds or structures.
  5. Impoundment of water.
  6. Excavation or other digging unless otherwise indicated.



7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust towards protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

D. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Engineer.

### 3.4 EXISTING UTILITIES

A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

1. Verify that utilities have been disconnected and capped before proceeding with site clearing.

B. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

2. Owner will arrange to shut off indicated utilities when requested by Contractor.

C. Locate, identify, and disconnect utilities indicated to be abandoned in place.

D. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Engineer not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Engineer's written permission.

E. Excavate for and remove underground utilities indicated to be removed.

F. Removal of underground utilities is included in Division 2 Sections.

### 3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain.

2. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.

- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches (200 mm), and compact each layer to a density equal to adjacent original ground.

### 3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
  - 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

### 3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, existing stockpiles, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

## SECTION 02300 – EARTHWORK

### PART 1 - GENERAL

#### 1.1 RELATED SECTIONS

- A. The Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 and 2 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes, but is not limited to, the following:
  1. Preparing subgrades for drainage swale (including stone check dams and sediment forebay embankment), storm drain trenches, detention basin overflow structure, detention basin, and turf and grasses.
  2. Dewatering of excavations.
  3. Excavating and backfilling for drainage swale, detention basin (including embankment and overflow structure), and storm drain piping.
  4. Gravel borrow base for drainage swale (lower portion to be stabilized by engineered turf system), detention basin overflow structure, and for storm drain trench (if determined necessary).
  5. Riprap and washed stone for detention basin sediment forebay embankment and drainage swale stone check dams.
  6. Disposal of unsuitable material.
  7. Disposal of surplus suitable material.
  8. Grading to proposed subgrade elevations.
- B. Related Sections:
  1. Division 2 Section "Storm Drainage" for drainage swale (including stabilization measures), detention basin overflow structure, sediment forebay embankment and stone check dam construction, and storm drain piping.
  2. Division 2 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling surficial materials, excavating and stockpiling suitable fill material, and removal of above- and below-grade improvements and utilities.
  3. Division 2 Section "Lawns and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

#### 1.3 DEFINITIONS

- A. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- B. Backfill: Soil materials used to fill trench, structure or pit excavations.
  1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  2. Final Backfill: Backfill placed over initial backfill over a pipe in a trench.
- C. Bedding Material: Layer placed over the subgrade before laying pipe or structure.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  1. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- F. Fill: Soil materials used to raise existing grades.
- G. Gravel Borrow: Satisfactory on-site soil or imported material (from off-site source) for use as fill within lower section of drainage swale (beneath engineered turf system), beneath the detention basin overflow structure, or as base material for drainage trench (if determined necessary).
- H. Pervious Backfill: Well-draining fill material placed to construct the embankment of the detention basin.
- I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 1 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.
- J. Structures: Buildings, footings, foundations, drainage manholes/catch basins, detention basin overflow structures, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below drainage swale topsoil layer in upper portion of swale, below drainage swale gravel borrow layer in the lower portion of the swale, below detention basin topsoil layer and embankment fill, below detention basin overflow structure gravel borrow base layer, or below topsoil materials in locations outside of detention basin and drainage swale.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

#### 1.4 SUBMITTALS

- A. Product Data: For the following:

1. Geotextile filter fabrics.
- B. Samples for Verification: For the following products, in sizes indicated below:
  1. Geotextile filter fabrics: 12 by 12 inches (300 by 300 mm).
- C. Qualification Data: For qualified testing agency.
- D. Material Test Reports: Reports shall be prepared (by a qualified testing agency) for each on-site and borrow soil material proposed for fill and backfill. The reports shall demonstrate compliance with the following requirements.
  1. Classification according to ASTM D 2487.
  2. Gradation in accordance with ASTM D 422.
  3. Laboratory compaction data according to ASTM D 1557.
  4. Origin of material.
  5. Classification and laboratory compaction curve for on-site soil material, in accordance with the above requirements.
- E. Field Test Data Reports:
  1. In-Field Moisture Density Tests according to ASTM D 2922/3017.
  2. Compaction test results shall be submitted demonstrating compliance with the compaction requirements.
- F. Method for Dewatering. Identify process for removing particulate matter from pumped or drained water.
- G. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

#### 1.5 QUALITY ASSURANCE

- A. All activities shall comply with the State of South Carolina Department of Transportation Standard Specifications for Highway Construction 2007 edition as revised (referred to as "Standard Specifications" herein).
- B. Perform excavation operations in accordance with OSHA Regulations 1926.651 and 1926.652.
- C. Pre-excavation Conference: Conduct conference at Project site.
- D. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

#### 1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, driveways, and other adjacent occupied or used facilities during site clearing operations. Access to the site shall be achieved from

Pendleton Street. Install and maintain temporary traffic controls as determined necessary by City and/or Owner.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify 'Call Before You Dig' (South Carolina 811) at 1-888-721-7877, three full working days or 72 hours (not including the day you call) before beginning earth moving operations.
- C. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Division 1 Section "Temporary Erosion and Sediment Control" are in place.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide clean, borrow soil materials when sufficient satisfactory native soil materials are not available from excavations.
- B. Bedding Material for Storm Drain Trenches: Material shall conform to Class I, II, or III material per ASTM D2321.
- C. Class I Backfill: Angular crushed stone or rock, dense or open graded with little or no fines (1/4 inch to 1 1/2 inches in size).
- D. Class II Backfill: Clean, coarse grained materials, such as gravel, coarse sands and gravel/sand mixtures (1 1/2 inches maximum in size) conforming to Soil Classification Groups GW, GP, SW, SP, GW-GC, SP-SM.
- E. Class III Backfill: Coarse grained soil materials with fines including silty or clayey gravels or sands conforming to Soil Classification Groups GM, GC, SM, and SC. Gravel or sand must comprise more than 50 percent of Class III materials (1 1/2 inches maximum size).
- F. Common Borrow: Native material free of rock larger than 3 inches in any dimension.
- G. Final Backfill for Storm Drain Trench: On-site or imported material meeting the requirements of Section 302.2.1.2 of the Standard Specifications
- H. Gravel Borrow: Imported soil conforming to Section 302.2.1.2 of the Standard Specifications and free of debris, waste, frozen materials, vegetation, clay and other deleterious matter; adequately graded for satisfactory compaction.
- I. Initial Backfill for Storm Drain Trench: Class I, II, or III material per ASTM D2321.
- J. Pervious Backfill: Pervious backfill material used in construction of basin embankment shall conform to material requirements listed in Division 2 Section "Storm Drainage."

- K. Satisfactory Soils: Materials conforming to the soil classifications listed for pervious backfill.
- L. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

## 2.2 GEOSYNTHETICS

- A. Geotextile filter fabric to be installed in detention basin embankment (boulder) construction and between stone check dam/forebay embankment stone and engineered turf or turf reinforcement matting shall be Class 2, Type B in accordance with Section 804.2.11 of the Standard Specifications. The fabric shall be a nonwoven needle-punched geotextile, manufactured for erosion control (under riprap) applications and placed in accordance with the Contract Drawings. The filter fabric shall be made from polyolefins or polyesters with a weight of at least 8 oz. per square yard; with elongation greater than 50 percent; complying with AASHTO M 288 and the following minimum properties, measured per test methods referenced:
  - 1. Survivability: Class 2; AASHTO M 288.
  - 2. Grab Tensile Strength: 200 lbf; ASTM D 4632.
  - 3. Sewn Seam Strength: 180 lbf (630 N); ASTM D 4632.
  - 4. Tear Strength: 80 lbf; ASTM D 4533.
  - 5. Puncture Strength: 80 lbf; ASTM D 4833.
  - 6. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
  - 7. Permittivity: 0.2 per second, minimum; ASTM D 4491.
  - 8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect surrounding structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.

### 3.2 CONTROL OF WATER

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding or damaging Project site and surrounding area.
- B. Protect excavations, backfills, fills and subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. Provide positive drainage of backfill and fill.
  2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations if determined necessary during construction. Maintain dewatering until structures, pipes and appurtenances will not be damaged by surface or ground water. Maintain until dewatering is no longer required.
  3. Any excavations down to groundwater will be backfilled prior to the end of the working day to prevent exposure during off-hour rain events.
- C. Obtain discharge permit for stormwater discharging into adjacent storm drainage system or waterway if determined necessary during construction. Remove particulate matter from pumped or drained water which is discharged or flows into storm drainage system or waterway.

### 3.3 EXPLOSIVES

1. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavation to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions.
1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and/or rock, replace with satisfactory soil materials.
  2. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

### 3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
- B. Do not disturb bottom of excavation. Trim bottoms to required lines and grades to leave solid base to receive other work.

### 3.6 EXCAVATION FOR DETENTION BASIN AND DRAINAGE SWALE

- A. Excavate soils within drainage swale and detention basin to the lines, cross sections, elevations/grades, and subgrades indicated on the Contract Drawings. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm).
- B. Remove all roots, stumps, rock, and other materials in the sides and bottom of detention basin and drainage swale to conform to the slope, grade, and shape of the required section.



- C. Construct embankment cuts to avoid/minimize erosion.
- D. Do not disturb bottom of excavation unless unsatisfactory soils are present. Trim bottoms to required subgrade lines and elevations to leave solid base to receive other work. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

### 3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
  - 1. Clearance for Stormwater Piping: As indicated on the Contract Drawings.
- B. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1. Excavate trenches 6 inches deeper than bottom of pipe elevation to allow for installation of bedding course. Hand excavate for bell of pipe.

### 3.8 APPROVAL OF SUBGRADE

- A. Notify Engineer when excavations have reached required subgrade during construction of detention basin (including detention basin overflow structure and piping) and drainage swale.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
  - 1. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  - 2. Compact soft pockets and areas of excess yielding in subgrade. Do not compact wet or saturated subgrades.
    - a. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

### 3.9 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations in the area indicated on the Contract Drawings.

### 3.10 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Surveying locations of underground utilities (i.e. storm drain piping) for Record Documents.
  - 2. Inspecting underground utilities (i.e. storm drain piping).
  - 3. Removing trash and debris.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.11 UTILITY TRENCH BACKFILL AND COMPACTION

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. All bedding material and backfill shall be clean, free of debris and rubble, and free of materials which may cause pollution of groundwater.
- C. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- D. Place and compact initial backfill to the dimensions indicated on the Contract Drawings.
  - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with any utilities testing. Where initial backfill consists of crushed stone, compact using vibratory compactor in lifts not exceeding 6-inches. Where initial backfill consists of a gravel material, compact in 6-inch lifts to achieve a minimum compaction of 95% the standard Proctor maximum dry density.
- E. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- F. Backfill voids with satisfactory soil while removing shoring and bracing (if applicable).

### 3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
  - 1. Under structures and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material at 95 percent.
  - 2. Under detention basin embankment, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 95 percent.

3. Under lawn or unpaved areas outside of drainage swale and detention basin, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

### 3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  1. Lawn or Unpaved Areas: Plus or minus 1 inch, however, not consistently in one direction.
  2. Walks: Plus or minus 1 inch.
  3. Pavements: Plus or minus 1/2 inch.

### 3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified geotechnical engineering testing agency or a soils testing company to perform tests and inspections. A Soils Testing Company must approve ALL selected backfill material as meeting all SCDOT standards (where applicable) and the specifications provided within the Contract Documents. The Agency shall provide written confirmation to the Engineer and/or Owner.
- B. Testing agency shall inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  1. Detention Basin Embankment: At subgrade and at each compacted fill and backfill layer, at least one test for every 50 feet of embankment area, but in no case fewer than three tests.
  2. Drainage Swale: At subgrade, at least one test for every 100 feet of drainage swale, but in no case fewer than four tests.
  3. Detention Basin Floor: At subgrade, at least one test for every 500 square feet, but in no case fewer than three tests.
  4. Trench Backfill: At each compacted initial and final backfill layer lift, at least one test for every 50 feet or less of trench length, but no fewer than two tests.

- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.
- E. If at any time an Owner's representative arrives on site and finds the Contractor backfilling material in greater lifts than specified, the Contractor shall remove all selected backfill material associated with that construction activity and begin proper backfilling and compacting again, all at the Contractor's expense.
- F. The Contractor shall submit all soils testing results to the Engineer and/or Owner in a timely fashion. The reports shall include the location where the soil was tested, a description of the types of soils used in backfilling for each road and a written confirmation that all of the selected backfill soils meet the pertinent specifications, signed and dated by the certified tester.

### 3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

### 3.16 DISPOSAL OF SURPLUS MATERIALS

- A. Temporarily transport surplus satisfactory soil to designated storage areas on Owner's property for re-use. Stockpile soil in location indicated on the Contract Drawings.
  - 1. Remove excess satisfactory soils and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

## SECTION 02630 - STORM DRAINAGE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 and 2 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

##### A. Section Includes:

1. Stormdrain piping and fittings.
2. Detention basin overflow structure (and appurtenances) and embankment construction.
3. Sediment forebay embankment and stone check dams.
4. Reinforced drainage swale.

##### B. Related Sections include the following

1. Division 2 Section "Lawns and Grasses" for swale and detention basin seeding.
2. Division 2 Section "Earthwork" for backfill; drainage swale, detention basin, sediment forebay, and stone check dam materials; and for excavation requirements.

#### 1.3 DEFINITIONS

- A. Engineered Turf Reinforced Swale: A drainage swale that is reinforced by an environmentally friendly hardened erosion armoring technology that combines an engineered synthetic turf with a high-friction geomembrane; both of which are locked into place with a high-strength infill.
- B. HDPE: High-density polyethylene plastic.
- C. Reinforced Vegetated Swale: A drainage swale that is reinforced with turf reinforcement matting that is designed to provide non-erosive flow conditions to promote the establishment of vegetation and minimize the loss of soil and seed/vegetation by waterborne forces.
- D. Stone Check Dam: A stone check dam is a barrier constructed of stone that reduces the flow velocity of runoff, while minimizing channel erosion, and promoting sediment deposition.
- E. Turf reinforcement matting: A long-term, non-degradable RECP composed of UV-stabilized, non-degradable, synthetic fibers, nettings and/or filaments processed into three-dimensional reinforcement matrices designed for permanent and critical hydraulic applications where design discharges exert velocities and shear stresses that exceed the limits of mature natural vegetation. TRMs provide sufficient thickness, strength and void space to permit soil filling and/or retention and the development of vegetation within the matrix.

#### 1.4 QUALITY ASSURANCE

- A. Where "Standard Specifications" is used, it shall mean "State of South Carolina Department of Transportation Standard Specifications for Highway Construction," 2007 edition as revised and all issued supplements and amendments.

#### 1.5 SUBMITTALS

A. Product Data:

1. HDPE piping and fittings as well as bedding and backfill materials.
2. Overflow structure including trash rack.
3. Sediment forebay embankment materials.
4. Engineered turf and turf reinforcement matting materials associated with drainage swale including geotextiles. This shall include the manufacturer's warranties for products.
5. Drain manhole frame and covers (for drain inlet conversions).
6. Stone check dam materials.
7. Non-woven geotextile fabric.

B. Shop Drawings: Include plans, elevations, details, and attachments for the following:

1. Overflow Structure.

- a. Structure dimensions including height, thickness of base, wall thickness, and riser dimensions.
- b. Include inlet and outlet pipe orientation (types, sizes, and invert elevations) and trash rack.

C. Material/Product Certificates

1. For overflow structure provide the following:

- a. Provide material certificates for the concrete components including materials and aggregates, steel reinforcement, admixtures, waterstops, curing materials, and appurtenances contained in each unit.
  - b. Provide concrete mix design. For each concrete mix design provide compressive strength test results indicating mix design is capable of meeting the minimum required compressive strength.
  - c. Provide product certificate showing compliance with ASTM C 913 or ASTM C 478.
  - d. Provide grout mix design.
2. Material certification for boulders used to line western edge of detention basin embankment.

- D. Samples:
  - 1. One (1) 12" x 12" sample of engineered turf and one (1) 12" x 12" boxed turf sample including infill representative of finished synthetic turf system. One (1) 12" x 12" sample of engineered polyethylene backing must also be submitted.
- E. Coordination Drawings: Record and show sizes, locations, and elevations of drain piping and overflow structure. Indicate interface and spatial relationship between manholes, piping, and proximate structures. This information shall be provided on the As-Built Drawings.
- F. For Record Purposes
  - 1. Manufacturer's installation instructions for engineered turf and permanent turf reinforcement matting.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store HDPE piping, engineered turf, turf reinforcement matting, pipe fittings, or other plastic materials in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle piping and overflow structure according to manufacturers' written rigging instructions.
- D. Handle outlet structure trash rack and engineered turf system according to manufacturers' recommendations.
- E. Turf reinforcement labeling, shipment and storage shall follow ASTM D 4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number. Each shipping document shall include a notation certifying that the material is in accordance with the manufacturer's certificate.
- F. Turf reinforcement matting shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants. The protective wrapping shall be maintained during periods of shipment and storage.
- G. During storage, turf reinforcement matting shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, extended exposure to ultraviolet (UV) radiation, precipitation, chemicals that are strong acids or strong bases, flames, sparks, temperatures in excess of 160°F and any other environmental condition that might damage the matting.

## PART 2 - PRODUCTS

### 2.1 DRAIN PIPING AND FITTINGS

- A. HDPE Pipe: Perforated and solid wall piping shall consist of high density polyethylene having a smooth interior and angular exterior corrugations as manufactured by Advanced Drainage Systems (ADS) Inc., or approved equal.

1. 4-inch diameter perforated underdrain pipe shall meet AASHTO M252, Type S and shall have Class II perforations.
  2. 15-inch solid wall diameter pipes shall meet AASHTO M294, Type S.
  3. Manning's n-value for use shall be equivalent to 0.012.
  4. Virgin material for pipe and fitting production shall be high-density polyethylene conforming with the minimum requirements of cell classification 424420 for 4 through 10-inch diameter pipes and 435400C for 12 through 60-inch diameter pipes, as defined and described in the latest version of ASTM D3350—except the carbon black content shall not exceed 4%.
  5. Virgin pipe material for 12-60 inch diameter pipes shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.5 and 5.1 of AASHTO M294 and ASTM F2306 respectively.
- B. Joints shall meet requirements of AASHTO M252 and AASHTO M294.
1. Shall be watertight according to requirements of ASTM D3212.
  2. Gaskets shall meet requirements of ASTM F477 and shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. Joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.
  3. Pipes with diameters from 12-60 inches shall have a reinforced bell with a polymer composite band. The bell tolerance device shall be installed by the manufacturer.
- C. Fittings shall conform to AASHTO M252 and AASHTO M295.
1. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight joint performance requirements.
- D. Bedding and Haunching/ Initial Backfill Materials for HDPE piping shall be installed to the dimensions indicated on the Contract Drawings and shall conform to the following:
1. Bedding: Suitable material shall be Class I, II, or III and installed as required in ASTM D2321, latest edition. Unless otherwise specified by the Engineer, minimum bedding thickness shall be 4 inches.
  2. Haunching and initial backfill: Suitable material shall be Class I, II or III and installed as required in ASTM D2321, latest edition.

## 2.2 DETENTION BASIN EMBANKMENT

- A. Pervious Backfill: Pervious backfill shall be used in areas where fill is required to achieve sub-grade level and shall consist of satisfactory on-site material or, alternatively, borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
1. Satisfactory Pervious Backfill Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.



2. Unsatisfactory Pervious Backfill Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups. Unsatisfactory pervious backfill soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- B. Boulders for Detention Basin Embankment Edge: Natural river stone, field stone or rock fragments that are hard, sound and durable; resistant to weathering action; reasonably fine grained; and free from structural defects that would impair the strength or durability of the stone. Stones with defects that have been repaired with cement or other materials shall not be allowed..
1. Match appearance (color, grain size and pattern) of rock native to the geographic area.
  2. Offsite Source: Natural stones from river beds, gravel pits/mines or undeveloped sites, known to be of satisfactory quality.
  3. No limestone or other stones differing in quality or color shall be allowed.
  4. Shape shall be angular, blocky and size shall be as depicted on Drawings.
- C. The bottom and sides of the detention basin shall receive a 6 inch layer of manufactured topsoil and seed in accordance with Division 2 Section "Lawns and Grasses."
- D. Geotextile to be installed along backside of row of boulders (to prevent the migration of fines through the boulder void spaces) shall be Class 2, Type B in accordance with Section 804.2.11 of the Standard Specifications.

## 2.3 DETENTION BASIN OVERFLOW STRUCTURE

- A. Precast Concrete Overflow Structure:
1. Description: Overflow structure shall be constructed of precast, reinforced concrete (meeting or exceeding the requirements of ASTM C 478); of length, width, and height indicated; and with provision for sealant joints.
  2. Reinforcing steel shall conform to the requirements of ASTM A 706, Grade 60, and meeting the applicable requirements of Section 703 of the Standard Specifications. Any wire mesh used shall conform to the requirements of AASHTO M 55 and AASHTO M 221.
  3. Concrete shall be compressive strength 4,000 psi Type II cement meeting the requirements of Section 701 of the Standard Specifications.
  4. Lift holes and/or devices may be placed as necessary. All lift holes shall be grouted prior to completion of the installation. All lifting methods must meet OSHA regulations.
  5. Form openings for pipe as required to accommodate pipe size and location specified. Orient precast drainage structure so that pipes enter through the walls. Pipes may enter through the corners of solid wall boxes if a minimum of 6" of wall is provided above the hole to the top of the box or to another opening.
  6. Joint sealant shall be performed butyl rubber mastic type seal that complies with AASHTO M198 or synthetic rubber gasket that complies with ASTM C-443 or C-361.

7. Grout the flow line from the base to the outlet pipe to maintain a continuous flow. Grout shall be Type M mortar material in accordance with Section 718 of the Standard Specifications.
  8. Cast or factory cut pipe opening in manholes:
    - a. Flexible pipe boot: ASTM C932M
    - b. Attach boot to piping with dual stainless steel straps
    - c. All other hardware to be stainless steel
    - d. Acceptable product: Kor-N-Seal or approved equal.
    - e. Size lift holes and inserts for a precision fit with the lift devices. Do not penetrate through the manhole wall. Comply with OSHA Standard 1926.704.
- B. Trash Rack:
1. Fiberglass-reinforced, UV-stabilized HDPE trash rack. Trash rack shall have a flat roof and be manufactured to the dimensions necessary to facilitate installation of the trash rack to the top of the overflow structure.
    - a. StormRax™ Flat Roof Rack as manufactured by Plastic Solutions, Inc. Trash rack shall be 54 3/8" (length) by 54 3/8" (wide) by 7 1/2" (high).
    - b. Or approved equal.

#### 2.4 SEDIMENT FOREBAY EMBANKMENT AND STONE CHECK DAMS

- A. Washed Stone: Sediment forebay embankment shall consist of a 12-inch thick layer of washed stone having a  $D_{50}$  of 3/4 inch to 1 inch and conforming to Section 302.2.1.1 of the Standard Specifications.
1. Use crushed stone obtained from sources listed on the most recent edition of SCDOT Qualified Product List 2.
- B. Stone Riprap: Sediment forebay embankment shall consist of Class A riprap conforming to Section 804.2.1 of the Standard Specifications.
- C. Geotextile to be installed between stone and engineered turf or turf reinforcement matting shall be Class 2, Type B in accordance with Section 804.2.11 of the Standard Specifications.

#### 2.5 REINFORCED DRAINAGE SWALE

- A. The surface of the drainage swale shall be stabilized with engineered turf or turf reinforcement matting as indicated on the Drawings.
1. Engineered Turf: The lower section of the drainage swale shall be stabilized by an engineered turf system. The turf system shall combine an engineered synthetic turf with a high friction geomembrane that is locked into place with a specially designed high-strength infill. The engineered turf system shall meet or exceed the properties of HydroTurf® Z as manufactured by Watershed Geosynthetics. The color shall be the 75% green and 25% tan blend.

2. Turf Reinforcement Matting: The upper section of the drawing swale shall be stabilized by a turf reinforcement mat (TRM). The TRM shall consist of a web of crimped, interlocking, multi-lobed polypropylene fibers positioned between two biaxially oriented nets and mechanically bound together by parallel stitching with polypropylene thread. The TRM shall be stabilized against chemical and ultraviolet degradation and contain no biodegradable components. The TRM shall meet or exceed the properties of LANDLOK® TRM 450 as manufactured by Propex Operating Company, LLC or VMAX®C350 as manufactured by North American Green, and conforming to the following minimum average roll values and performance properties:

a. Minimum Average Roll Values:

Property	Test Method	Units	Property Requirement
Thickness	ASTM D-6525	mm (in)	10.1 (0.40)
Resiliency	ASTM D-6524	percent	90
Mass Per Unit Area	ASTM D-6566	G/sq m (oz/sy)	340 (10.0)
Tensile Strength	ASTM D-6818	kN/m (lb/ft)	5.8 x 4.3 (400 x 300)
Tensile Elongation	ASTM D-6818	percent	50 (max)
Light Penetration (% Passing)	ASTM D-6567	percent	20
UV Resistance	ASTM D-4355	percent	80 at 1000 hrs

- b. Performance Properties: In a vegetated state, the TRM must demonstrate acceptable performance (as defined by the Engineer) when subjected to at least 0.5 hrs of continuous flow producing the following conditions.

- 1) Permissible velocity: 5.5 m/sec (18 ft/sec)
- 2) Permissible tractive force (shear stress): 0.479 kPa (10 psf)

c. Performance may be demonstrated by:

- 1) Flume testing at an independent facility under conditions similar to this project provided that the manufacturer can demonstrate that the material tested is functionally equivalent to the material being supplied.
- 2) A documented case history of successful performance (as defined by the Engineer) at an installation similar to this project where (documented) hydraulic forces met or exceeded the requirements listed above provided that the manufacturer can demonstrate that the case history material is functionally equivalent to the material being supplied.

d. Ground Anchoring Devices:

- 1) Length: 200 to 450 mm (8 to 18 inches); sufficient ground penetration to resist pullout. Use longer anchors for loose soils.
- 2) U-shaped wire staples or metal pins.
- 3) Wire staples: Minimum 8 gauge.

- 4) Metal pins: Stainless steel, minimum 5 mm (0.20 in) in diameter with 40 mm (1.5 in) steel washer.

### PART 3 - EXECUTION

#### 3.1 EARTHWORK

- A. Refer to Division 2 Section "Earthwork" for additional requirements pertaining to excavation, trenching, and backfilling.

#### 3.2 PIPING INSTALLATION, GENERAL

- A. General Locations and Arrangements: Install piping at the locations and elevations specified on the Contract Drawings.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install HDPE pipe and as follows:
  1. Join pipe, tubing, and fittings with couplings for water-tight joints to meet the watertight joint performance requirements of AASHTO M252, AASHTO M294 or ASTM F2306.
  2. Install according to ASTM D 2321 and manufacturer's written instructions.
  3. Install corrugated piping according to the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."
- D. Install HDPE piping within trench meeting the minimum width requirements as indicated on the Contract Drawings. Where the trench bottom is unstable, the Contractor shall excavate to a depth required by the engineer and replace with a foundation of Class 1 material as defined in ASTM D2321, "Standard Practice for Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications," latest edition, as an alternate and at the discretion of the Engineer. The trench bottom may also be stabilized using a woven geotextile fabric.

#### 3.3 DETENTION BASIN EMBANKMENT

- A. Comply with the provisions of permits for the project that limit the surface area of exposed erodible material.
- B. Perform work under this section in a manner that ensures compliance with the SWPPP and Subsection 107.26 of the Standard Specifications. Conduct operations in a manner consistent with good erosion control practices that minimizes soil erosion and to the extent feasible that prevents sediment from leaving the site. Take all measures necessary to control erosion and to minimize the transportation of sediment into adjacent watercourses, wetlands, and impoundments throughout the life of the project.

- C. Do not place rocks, broken concrete, or other solid materials in embankment areas. Likewise, do not construct the top 6 inches of embankments with any material larger than can pass a 3-inch sieve.
- D. Complete all clearing and grubbing of embankment area in accordance with Section 02230 "Site Clearing."
- E. Use suitable site-excavated or imported materials for the formation of the surface layer in addition to the pervious backfill embankment sections. Perform the work in a manner and sequence with selective grading and necessary cross-hauling so that the most suitable soil is reserved for topping the embankments to the extent practicable.
- F. Construct and maintain the embankment to the grade, dimensions, and cross-section shown on the Drawings.
- G. Construct embankment by placing, spreading, and compacting the material in successive, uniform, horizontal layers of not more than 8 inches in depth (loose measurement) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (loose measurement) for material compacted by hand-operated tampers.
- H. Keep each layer of the embankment material uniform and shaped to drain for the full width of the cross-section by the use of blade graders, bulldozers, or other suitable equipment.
- I. Do not use dragline casting in constructing embankments unless the material so handled can be placed in layers and compacted as specified.
- J. Compact each layer of embankment to not less than 95% of maximum density before successive layers are applied. Accomplish the compaction by using suitable construction procedures while the material is at suitable moisture content. SC-T-29 is used to determine the maximum densities.
- K. The western edge of the detention basin embankment shall be lined using a row of stone boulders. The boulders shall be placed on a compacted layer pervious backfill and layer of geotextile fabric. The fabric shall be placed at the soil/boulder interface beneath and behind the stones to prevent the horizontal migration of soil through the joints of the boulder. The top of boulders shall be set to the elevation listed on the Contract Drawings.

#### 3.4 DETENTION BASIN OVERFLOW STRUCTURE

- A. General: Install detention basin overflow structure, complete with appurtenances and accessories indicated on the Contract Drawings.
- B. Where rock, hardpan, or other unyielding material is encountered during excavation for manholes, it shall be removed to a depth of 12 inches below the bottom of the structure. The excavation below grade shall be backfilled with satisfactory compacted bedding material for a horizontal distance of 12 inches around the outside diameter of the structure.
- C. Where a firm foundation is not encountered during installation of manholes due to soft, spongy, or other unstable soil; the unstable soil shall be removed to a depth of 12 inches below the structure and replaced with approved granular bedding material for a horizontal distance of 12

inches around the outside diameter of the structure. The granular material shall be compacted to provide adequate support for the structures.

- D. Install precast concrete structure sections with sealants according to ASTM C 891.
- E. Where specific structure construction is not indicated, follow manhole manufacturer's written instructions.
- F. Set top of structure to elevation indicated on the Contract Drawings.

### 3.5 SEDIMENT FOREBAY EMBANKMENT AND STONE CHECK DAMS

- A. Excavate a six inch deep trench across drainage swale in the locations, and to the dimensions, indicated on the Contract Drawings.
- B. Compact subgrade and install engineered turf and turf reinforcement matting as recommended by manufacturer and indicated in Section 3.7 of this specification.
- C. Place non-woven geotextile fabric across the base of the trench atop the engineered turf and/or turf reinforcement matting.
- D. Place riprap to the dimensions specified on the Contract Drawings. Place riprap either mechanically or by hand in a manner such that the larger stones are well distributed, and the entire mass of stone conforms to the specified gradation. Place riprap with the percentage of voids is as small as practical. Place riprap to its full thickness in one operation and in a manner that avoids displacing the underlying material. Hand place or re-arrange individual stones by mechanical equipment to the extent necessary to secure the results specified.
- E. In the case of the sediment forebay, shape the center of the forebay to be approximate six inches lower than the edges in accordance with the dimensions provided on the Contract Drawings.
- F. Place 12-inch uniform layer of washed stone on the upstream face of check dams and sediment forebay.

### 3.6 REINFORCED DRAINAGE SWALE INSTALLATION

- A. Delineate the limits of the swale grading prior to commencement of excavation. Upon approval of delineation, stakes shall be set to maintain limits of excavation as directed by Engineer.
- B. Excavate swale to subgrade elevations as indicated on the Contract Drawings. This equates to approximately six inches below finish elevations. Material excavated from the vegetated swale shall be temporarily stored in designated on-site stockpile area and ultimately removed and disposed of if cannot be re-used as suitable backfill or deemed excess.
- C. In location of lower portion of drainage swale to be stabilized by engineered turf, install gravel borrow and compact to achieve an approximate 6-inch depth.

- D. In location of upper portion of drainage swale to be stabilized by turf reinforcement matting, install approximately gravel borrow and lightly compact to achieve an approximate five inch depth.
- E. Remove large rocks, soil clods, vegetation, and other sharp objects that could keep engineered turf and/or turf reinforcement matting from intimate contact with subgrade.
- F. Install engineered turf system, in lower portion of drainage swale, in accordance with manufacturer's recommendations. Engineered turf system shall extend within drainage swale between uppermost stone check dam and approximately four feet downstream of the detention basin sediment forebay embankment as reflected on the Contract Drawings.
- G. Install turf reinforcement matting in the upper portion of the drainage swale as reflected on the Contract Drawings, in accordance with the manufacturer's recommendations, and as follows:
  - 1. Beginning at downstream end of upper portion of drainage swale, start installation of turf reinforcement matting (TRM) in center of channel. Place initial end of first roll of TRM in anchor trench (beneath stone check dam) and secure with ground anchor devices at 300 mm (12 in) intervals. Position adjacent rolls of TRM in anchor trench in same manner, overlapping preceding roll minimum 75 mm (3 in).
  - 1. Secure TRM at 300 mm (12 in) intervals along the trench, backfill and compact with specified soil or as directed by Engineer.
  - 2. Unroll center strip of TRM upstream over compacted trench. Stop at next check slot or terminal anchor trench. Unroll adjacent rolls of TRM upstream in similar fashion, maintaining 75 mm (3 in) overlap.
  - 3. Fold and secure rolls of TRM snugly into transverse check slots. Lay material in bottom of slot, then fold back against itself as indicated. Anchor through both layers of TRM at 300 mm (12 in) intervals. Backfill with soil and compact. Continue unrolling TRM widths upstream over compacted slot to next check slot or terminal anchor trench.
  - 4. Secure TRM to channel bottom with ground anchoring devices at a frequency of 3 anchors per square meter (2 ½ anchors per square yard). Increased anchoring frequency may be required if site conditions are such that the Engineer determines it necessary.
  - 5. Soil fill and seed the TRM by spreading and lightly raking approximately 1-inch of topsoil into TRM to completely fill its thickness. When using lightweight power equipment to fill over the TRM, avoid sharp turns. Do not drive tracked or heavy equipment over the TRM. Smooth out soil by barely exposing top portion of TRM. Do not place excessive soil above material. Broadcast additional seed or mulch above soil-filled mat and water.
- H. In the event that sediment is introduced into the BMP during or immediately following excavation, the sediment will need to be removed from the vegetated swale or underdrain prior to initiating the next step in the construction process.

- I. Remove the temporary erosion and sediment controls after the vegetated swale is stabilized per the Engineer's approval. It is important for the swale to be stabilized before receiving stormwater flow.

### 3.7 FIELD QUALITY CONTROL

- A. Clear interior of piping and overflow structure of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.
  1. In large, accessible piping, brushes and brooms may be used for cleaning.
  2. Place plug in end of incomplete piping at end of day and when work stops.
  3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.
- B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24-inches of backfill is in place, and again at completion of Project.
  1. Defects requiring correction include the following:
    - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
    - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
    - c. Crushed, broken, cracked, or otherwise damaged piping.
    - d. Infiltration: Water leakage into piping.
    - e. Exfiltration: Water leakage from or around piping.
  2. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
  3. Re-inspect and repeat procedure until results are satisfactory.

END OF SECTION



## SECTION 02800 - IRRIGATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Supplementary Conditions, and Division 01 Specification sections, apply to this section. See plans to initiate shop drawings.

#### 1.2 SUMMARY

- A. Provide all labor, materials, necessary equipment and services to complete the work called for in this Section or as shown on the plans, including but not necessarily limited to the following:
  - 1. Installation of temporary irrigation system to allow for establishment of lawn and subsequent irrigation in times of drought or high heat conditions.

#### 1.3 SUBMITTALS

- A. This is a performance specification for the design and construction of a temporary irrigation system for the lawn areas as shown on the construction documents. Contractor to submit all design plans, details, products, and materials as well as execution methods for review and approval prior to installation. All products materials and methods shall be in sustainable conformance with specifications. Contractor will be responsible for all necessary pressure testing.
- B. Qualifications Data: for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. The Contractor shall submit the following samples, certifications or test results prior to use on the project.
  - 1. Shop Drawings: Indicate, pipe sizing, pipe layout to water source, location and coverage of sprinkler heads, lawn and landscaping features, site structures and schedule of fittings to be used.
  - 2. Product Data: Provide component and control system and wiring diagrams.
  - 3. Overall irrigation construction documents.
  - 4. Pressure tests on water source.
- D. The Contractor shall submit all manufacturer's warranties, guarantees, installation instructions, specifications, owner's manuals, operating instructions, and maintenance manuals to the Owner.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has record of successful irrigation installation. Installer to be licensed by one of the three acceptable manufacturers listed in Part 2 "Products".

#### 1.5 DESCRIPTION OF WORK

- A. The work to be done under this contract includes, but is not limited to the following:
1. Installation of the irrigation system to be done by a licensed contractor by the one of the three listed acceptable manufacturers.
  2. Furnish and install new piping, fittings, isolation valves and necessary pipe line appurtenances.
  3. Furnish and install new electric control valve assemblies, sprinklers and swing joint assemblies.
  4. Furnish and install irrigation controllers including all necessary electrical connections (if required).
  5. Provide rain gauge at controller station.
  6. The General Contractor shall provide appropriate water tap and power to the irrigation controller.
  7. The installer shall be responsible for the initial start up, maintenance and final shutdown for the first year of operation

#### 1.6 AS-BUILT DRAWINGS

- A. After completion of the piping installation, the Contractor shall furnish an "as-built" drawing showing all sprinkler heads, valves, drains and pipelines to scale with dimensions where required, using the existing irrigation plan as reference. Instruction sheets and parts lists covering all operating equipment will be bound into a folder and furnished to the Owner in duplicate.

#### 1.7 INSTRUCTIONS

- A. After completion and testing of the system, the Contractor will instruct the Owner's personnel in the proper operations and maintenance of the system and controls, seasonal activation and shutdown and manufacturer's parts catalog.
- B. Provide schedule indicating length of time each valve is required to be open to provide a determined amount of water.

### PART 2 - PRODUCTS

2.1 SYSTEM The materials chosen for the design of the sprinkler system have been provided to enable the Owner to establish the level of quality and performance required by the system design. Any approved equals must be by complete system only, not components of a system.

A. Acceptable Manufacturer:

1. Licensee of the Toro Company, Irrigation Division, Riverside CA.
2. Licensee of the Rain Bird Corporation, Azusa/Glendora CA.
3. Licensee of the Hunter Industries Incorporated, San Marcos CA.

## 2.2 MATERIALS

### A. MEDIUM GEAR DRIVEN ROTARY SPRINKLER

1. The gear driven rotary sprinkler head shall be designed for inground installation. The sprinkler shall be capable of covering 50 foot to 77 foot radius depending on the exact size of the nozzle. The sprinkler shall apply 5.1 to 31.3 gallons per minute of water at 40 to 100 pounds per square inch of pressure and have a recommended operating pressure of 60 PSI.
2. Water distribution shall be via two screw –in nozzles mounted in a 4” high pop-up nozzle turret. Nozzles shall be colored coded for easy identification.
3. An arc memory feature shall return arc to previous setting if nozzle is turned beyond setting.
4. A rubber cover shall be a standard feature on the sprinkler head.
5. Gear-drive shall be of a bi-directional, planetary, water-lubricated design and be housed in body.
6. The sprinkler shall apply water at a precipitation rate of 0.20” to 0.63” of water per hour.
7. The sprinkler shall have a 100 percent warranty for 5 years against defects and workmanship.

### B. SMALL GEAR DRIVEN ROTARY SPRINKLER

1. Gear driven rotary sprinkler shall use 1 - 9 gpm at 25 - 100 psi with the recommended operating pressure at 55 psi.
2. All adjustments can be made from the top of the sprinkler. The arc adjustment can be easily seen with a red band. The top shall have a left arc indicator.
3. The nozzle turret shall have the “X-Flow” shut-off device.
4. Radius reduction shall be adjustable up to 25%.

5. Nozzle height is +/-5" when in operation. Retraction shall be achieved by a stainless steel spring. The nozzle shall be smooth, plastic or stainless steel with an overmolded riser wiper seal shall prevent the sprinkler from having foreign materials enter the body. The top shall have a rubber cover.
6. The arc shall be either full circle or adjustable part circle adjustable from 30 to 360 degrees. The body shall be constructed of noncorrosive heavy duty plastic with a basket filter screen at the base. The top shall have a dry mode pull up slot. A continuous unidirectional rotation provides uniform coverage when set at 360 degrees. Available with a standard reversible rubber check valve.
7. Each sprinkler shall have a color coded nozzle.
8. Trajectory adjustment from 5 to 25 degrees allows for easy fine tuning.
9. The gear drive shall be planetary design. The head shall have an arc memory that returns the sprinkler to previously set arc if the head is vandalized. A slip clutch assures no damage to the gears if vandalized.

#### C. PLASTIC CONTROL VALVE

1. The plastic valve shall be capable of withstanding pressures up to 220 psi and flows from 5 to 300 gpm.
2. The diaphragm shall be made of reinforced rubber and accessible from the top of the valve, without having to remove the body.
3. Pressure regulating unit: Pressure regulates in electric and manual modes and is serviceable under pressure. Minimum pressure differential is 10 psi.
4. Built in Schrader type valve for downstream pressure verification.
5. Internal downstream manual bleed and an external manual bleed feature.
6. Manual flow control is adjustable to zero flow.
7. The electric solenoid shall be a 24 VAC type, with an inrush current of .400 amps and a holding current of .2 amps. The solenoid shall have 18" lead wires, wired in parallel.

#### D. QUICK COUPLER VALVE

1. The quick coupler valve shall be one piece single lug type.

2. The valve shall be constructed of brass with a wall thickness guaranteed to withstand a normal working pressure of 150 psi without leakage. The quick coupler valve shall accept a quick coupler key with a top connection of female pipe thread and male pipe thread.
3. The quick coupler valve shall be manufactured by the irrigation system company.

E. COMMAND CONTROLLER (If Required)

1. Four independent programs offer concurrent operation capability. 7-day calendar, odd/even day or day interval options of 1-30 days. Excluded day option, when used with the odd/even day option, allows selection of specific day(s) not to water.
2. 365-day clock/calendar with excluded day option.
3. Station run times of 1 minute to 10 hours in 1 minute increments. 16 total start times. Start time stacking within each program.
4. Season adjust setting from 10 to 200% in 10% increments. Rain delay up to 7 days.
5. Programmable master valve on/off per program.
6. Automatic, semi-automatic, manual, and timed manual operation. Wiring. User friendly, programming dial and large, easy-to-read LCD.
7. Self-diagnostic circuit breaker and overrides.
8. Battery backup for up to 90 days during power loss. Lightning Surge on 24 VAC and station outputs.
9. Sensor hookups.
10. Weather resistant metal, locking cabinet with heavy duty internal transformer. UL and CUL listed.
11. The automatic controller shall as manufactured by the irrigation company.

F. RAIN GAUGE

1. The rain gauge device shall be designed to prevent sprinkler operation during rainfall. The rain gauge shall install easily to roof eaves or 3/4 inch PVC pipe.

G. BACKFLOW PREVENTER (If Required)

1. The backflow preventer shall consist of two independently operating, spring loaded, "Y" pattern check valves and one hydraulically dependent differential relief valve. The device shall automatically reduce the pressure in the "zone" between the check valves to at least 5 psi lower than the inlet pressure. Should the differential between the upstream and the zone of the unit drop to 2 psi, the differential relief valve shall open and maintain the proper differential.
2. Mainline valve body and caps, including relief valve body and cover, shall be bronze. Check valve moving member shall be center stem guided. All hydraulic sensing passages shall be internally located within the mainline and relief valve bodies and relief valve cover. Check valve and relief valve components shall be constructed so they may be serviced without removing the valve body from the line. Shut-off valves shall be fully ported.
3. The device shall be rated to 175 psi water working pressure and water temperature range from 32 degrees F to 140 degrees F.

H. PRE-FABRICATED BOOSTER PUMP ASSEMBLY

1. The pre-fabricated booster pump assembly shall be skid mounted on a tubular steel frame. The pump shall be a closed coupled centrifugal type, designed specifically for booster service. The pump selection shall be based on the requirements of the irrigation system.
2. The pump shall be capable of 5 to 140 gpm at a 20 to 70 psi boost. The motor shall be either a 115/230 Volt Single Phase, or 208/230/460 Volt Three Phase. Horsepowers shall range  $\frac{3}{4}$  to 7.5. The pump start shall either be from a relay from the Irrigation Controller or from a pressure switch start and flow switch start.
3. The unit shall include the following: 4-way troubleshooting light, Hands-On-Auto switch on door, syetm reset button on door, circuit breaker, plug in primary power connection, and pre-drilled mounting holes.
4. Pump protection shall be from a "Hot Stop" Pump Protection unit.

I. VALVE ACCESS BOX

1. Valve boxes shall be constructed of a rigid combination of polyolefin and fibrous components especially compounded for underground enclosures. Superflexion plastic material shall be chemically inert and normally unaffected by moisture, corrosion and the effects of temperature changes.
2. The contractor shall fill the entire area beneath the box with pea gravel before final installation of each box.

3. The valve box shall have a cast iron cover.

#### J. POLY-VINYL CHLORIDE (PVC) PIPE

1. All PVC pipe specified on the plan shall be virgin, high impact, poly-vinyl chloride (PVC) pipe, having a minimum working pressure rating of Class 160 for 1-1/2 inches and larger or Class 200 for pipe which is 1-1/4 inches and smaller in size.
2. The pipe shall be capable of withstanding a long term pressure test (1,000 hours) of 420 psi and a quick term burst test of 630 psi.
3. The pipe shall conform to U.S. Department of Commerce Commercial Standard CS 207-60, or latest revision. Material shall conform to all requirements of Commercial Standard CS 256-63, or latest revision.

#### K. PVC FITTINGS

1. Fittings for use with PVC pipe shall be Schedule 40 fittings produced from PVC Type 1, cell classification 12454-B. The fittings shall be listed by the National Safety Foundation for potable water services. The fittings shall be listed by IAPMO for water service and gas yard piping in appropriate types and sizes. PVC fittings shall meet the following codes and specifications: ASTM-D1784, ASTM-D2466.

#### L. PVC CEMENT

1. Cement for use on PVC fittings shall be NSF approved for Type I and Type II PVC pipe and schedule 40 fittings. Cement is to meet ASTM D-2564 and F-493 for potable water, pressure, gas conduit and drain pipes. Application temperature shall be 35 to 110 degrees Fahrenheit.

#### M. BRONZE GATE VALVE

1. The bronze gate valve shall be constructed with non-rising stem, solid wedge disc and screwed ends. The stem, lock nut, packing nut and gland follower shall be made of brass, ASTM B16, with the gland packing made of asbestos graphite. The hand wheel shall be constructed of cast iron, ASTM A126.
2. The gate valve shall have a working non-shock pressure of 125 psi for saturated steam and 200 psi for cold water, oil and gas. The body shall have a hydrostatic test pressure of 300 psi and the seat shall be at 200 psi.

#### N. CONTROL AND COMMON WIRE

1. All control wire shall be #14/1 U.F. direct burial. The common wire shall be #14/1 U.F. direct burial. The wire shall be solid copper and insulated with poly-vinyl chloride. Control wire shall be red in color and common shall be white.
2. Expansion curls shall be provided within 3 feet of each wire connection to a solenoid and at least every 300 feet in length.

#### O. SWING JOINT ASSEMBLY

1. All 1" swing joint assemblies for sprinklers shall be pre-assembled units from the factory made of Schedule 80 PVC. Swing joint consists of four 90 degree elbows and one 12 inch long nipple with 90 degree bend on one end. All swing joint assemblies shall be made from virgin PVC Type I, Clcl Classification 12454-B material listed for potable water conveyance by NSF. Working pressure shall be 200 psi combined static and surge.
2. The flexible swing joints for 3/4" inlet sprinklers shall consist of two 90-degree F.P.T. els and a piece of 3/8 inch thick walled polyethylene pipe known as "Funny Pipe" not to be more than 36" in length.
3. All swing joint assemblies and sprinklers attached shall be completely backfilled with sand to within 3" of final grade.

### PART 3 - EXECUTION

#### 3.1 DEPTH OF COVER

- A. Minimum depth of cover over piping used as lateral water distribution piping down stream of a control valve shall be 12 inches. Main water distribution piping under continuous pressure shall have at least 18 inches of cover.

#### 3.2 TESTING THE SYSTEM

- A. The entire system shall be tested at the normal system working pressure and upon visual inspection of the ground, should any leak be found, it shall be promptly repaired. The line shall then be retested until satisfactory.

#### 3.3 TRENCH SETTLEMENT

- A. If within one year from completion date major settlement due to improper compaction occurs and an adjustment in pipe, sprinkler heads, topsoil and seed or paving is necessary to bring the system to the proper level of the permanent grade, the Contractor, as part of the work under this contract, shall make said adjustments without extra cost to the Owner.

#### 3.4 ADJUSTING AND BALANCING THE SYSTEM



- A. All areas of the irrigation shall be inspected to insure proper coverage. If necessary, the Contractor shall adjust or change nozzles of sprinkler heads to correct any overcoverage or undercoverage.

### 3.5 WATERLINE

- A. The alignment of water line is only approximate and may be changed at the time of construction in order to avoid plantings and/or other obstacles as directed by Owner.

### 3.6 ELECTRICAL INSTALLATION

- A. The Contractor will be required to make connections to the building electrical system as is required for the proper operation of the automatic control system.
- B. All control circuitry, whether electrical or hydraulic, passing through the wall of the building or beneath a sidewalk, road or drive shall be installed in a suitable sleeve; whereas in all other locations they shall be installed in the pipe trench and protected by the pipe whenever possible.
- C. The joining of all underground wires shall be by the use of wire nuts covered with Scotchlok per installation instructions provided by the manufacturer.

### 3.7 WATER PIPING INSTALLATION

- A. Install pipe, valves, controls and outlets in accordance with manufacturer's instructions.
- B. Connect to water service.

### 3.8 FINAL ACCEPTANCE

- A. The system shall be fully operated in the presence of the Owner by the installer.
- B. System shall operate successfully for one year from date of completion. The installer shall be responsible for initial start up, maintenance, and final shut down for first year of operation.

END OF SECTION 02800

## SECTION 02920 - LAWNS AND GRASSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 through 2 Specification Sections, apply to this Section. See General Notes – Erosion Control for temporary seeding.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Providing and grading planting soil.
  - 2. Seeding.
- B. Related Sections include the following:
  - 1. Division 2 Section "Earthwork" for excavation, filling and backfilling, and rough grading.
  - 2. Division 2 Section "Storm Drainage" for swale and detention areas.
  - 3. Division 2 Section "Irrigation" for temporary irrigation system.

#### 1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Lawn: Newly graded areas to be seeded.
- C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath topsoil.
- D. Manufactured Soil: Soil produced by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- E. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

#### 1.4 SUBMITTALS

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- B. Product Certificates: For compost, soil amendments, fertilizers and mulch, signed by product manufacturer.

- C. Qualification Data: For landscape Installer.
- D. Material Test Reports: For standardized ASTM D 5268 topsoil, and imported topsoil.
- E. STA (Seal of Testing Assurance) from the US Composting Council for compost.
- F. Planting Schedule: Indicating anticipated planting dates for each type of planting.
- G. Shop Drawings: Provide layout of temporary irrigation system for approval by Engineer – see section 02800 Irrigation.
- H. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required maintenance periods.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- C. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- D. Soil Analysis: For each source of surface soil, compost and manufactured topsoil, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.
  - 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
  - 2. Report suitability of tested soil for plant growth.
    - a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. (92.9 sq. m) or volume per cu. yd. (0.76 cu. m) for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
    - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Fertilizer: Deliver in original sealed, labeled, and undamaged containers.

## 1.7 SCHEDULING

- A. Planting Restrictions: Plant during the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
  - 1. Spring Planting: May 1 to Sept 15.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

## 1.8 LAWN MAINTENANCE

- A. Begin maintenance immediately after each area is planted and continue until satisfactory lawn is established, but for not less than the following periods:
  - 1. Seeded Lawns: 60 days from date of Substantial Completion.
- B. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn.
  - 1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.
- A. Watering: Provide and maintain irrigation system to keep lawn uniformly moist to a depth of 4 inches.
  - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Provide shop drawings for temporary irrigation system for approval.
  - 2. Soil moisture must be maintained during germination period. Germination should begin within 7 to 10 days. Daily watering must be provided. Allow 20 days after first seedlings emerge for complete germination.
  - 3. Water lawn at a minimum rate of 1 inch per week, once grass has germinated (allow 30 days) until lawn is established. Provide temporary irrigation for a minimum of 10 weeks after seeding.
- B. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 40 percent of grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain grass height of 3 inches (75 mm).
- C. Lawn Postfertilization: Apply fertilizer after initial mowing and when grass is dry.
  - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m) to lawn area.

PART 2 - PRODUCTS

2.1 TEMPORARY SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Select the type of seeding from the table shown below as applicable to the project and time of seeding.

Seeding Schedules For Temporary Vegetation			
Schedule No.	Common Name of Seed	Rate Per Acre (Lbs.)	Planting Dates
1	Annual Sudan Grass (Sweet or Tiff)	40	May1 – Sept 15
2	Brown Top Millet	50	May 1 – Sept 15
3	Rye Grass, Italian	150	Sept 16 – April 31

2.2 TURFGRASS SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
  - 1. Bermudagrass (hulled)(Cynodon dactylon) 50%
  - Weeping Lovegrass (Eragrostis curvula) 15%
  - Purple Lovegrass (Eragrostis spectabilis) 15%
  - White Clover (inoculated) (Trifolium repens) 10%
  - Crimson Clover(inoculated) (Trifolium incarnatum) 10%

2.3 PLANTING SOIL

- A. Planting Soil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent and a maximum of 20 percent organic material content; free of surface stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.
  - 1. Planting Soil Source: Amend existing in-place surface soil to produce manufactured topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of stones, clay lumps, and other extraneous materials harmful to plant growth.
    - a. Surface soil shall be supplemented with imported or manufactured topsoil from off-site sources. Compost is recommended as the most cost effective way to achieve a manufactured soil. Only if necessary, obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from bogs or marshes.

2.4 INORGANIC SOIL AMENDMENTS

- A. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 (3.35-mm) sieve and a maximum 10 percent passing through No. 40 (0.425-mm) sieve.
- B. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- C. Aluminum Sulfate: Commercial grade, unadulterated.
- D. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.

2.5 ORGANIC SOIL AMENDMENTS

- A. Compost: Material shall be mature, stable, weed free, and produced by aerobic decomposition of organic matter. Compost feedstock may include, but is not limited to: agricultural, food or industrial residuals; class A biosolids as defined in the EPA CFR Title 40, Part 503; yard trimmings, or source-separated municipal solid waste. The product must not contain any visible refuse or other physical contaminants, substances toxic to plants, or over 5% sand, silt, clay or rock material by dry weight. The product shall possess no objectionable odors. The product must meet all applicable USEPA CFR, Title 40, Part 503 Standards for Class A biosolids. The moisture level shall be such that no visible water or dust is produced when handling the material.

Testing: The results of compost analysis shall be provided by the compost supplier. Maturity testing should be performed on site after the compost is delivered. Compost maturity test kits can be ordered from a number of commercial sources. Before delivery of the compost, the supplier must provide the following documentation:

- 1. feedstock percentage in the final compost product.
- 2. a statement that the compost meets federal and state health and safety regulations.
- 3. a statement that the composting process has met time and temperature requirements.
- 4. a copy of the lab analysis, less than four months old, performed by a Seal of Testing Assurance.
- 5. Certified Laboratory verifying that the compost meets the physical requirements as described.

Physical Requirements for Compost:

Parameter	Range	Testing Method
pH	5.0-8.5	TMECC 4.11A
Soluble Salt Concentration	< 10dS/m	TMECC 4.10-A
Moisture	30-60% wet weight basis	SMEWW 2540B
Organic Matter	30-65% dry weight basis	TMECC 5.07-A

Particle Size	98% pass through 3/4" screen or smaller	TMECC 2.02-B
Stability (Carbon Dioxide evolution rate)	>80% relative to positive control	TMECC 5.08-B
Maturity (Seed emergence and seedling vigor)	>80% relative to positive control	TMECC 5.05-A
Physical contaminants (man made inerts)	<1% dry weight basis	TMECC 3.08-A
Chemical contaminants	Meet or exceed US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3 levels:	
Arsenic	< 41ppm	TMECC 4.06-AS
Cadmium	< 39 ppm	TMECC 4.06-CD
Copper	< 1,500 ppm	TMECC 4.05-CU
Lead	< 300 ppm	TMECC 4.06-PB
Mercury	< 17 ppm	TMECC 4.06-HG
Molybdenum	< 75 ppm	TMECC 4.05-MO
Nickel	< 420 ppm	TMECC 4.06-NI
Selenium	< 100 ppm	TMECC 4.06-SE
Zinc	< 2,800 ppm	TMECC 4.06-ZN
Biological contaminants (pathogens)	Meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) levels:	
Fecal coliform	< 1,000 MPN per gram, dry weight basis	TMECC 7.01
Salmonella	< 3 MPN per 4 grams, dry weight basis	TMECC 7.02

- B. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
- C. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.
- D. Mycorrhizal Fungi: Commercially prepared soluble endo mycorrhizae inoculant to improve the manufactured soil with fungi for a healthy living regime and better nutrient absorption. It shall contain a blend of Endo mycorrhizal spores such as *Glomus aggregatum*, *G. etunicatum*, *G. clarum*, *G. deserticola*, *G. intraradices*, *G. monosporus*, *G. mosseae*, *Gigaspora margarita*, and *Paraglomus brasilianum*.

## 2.6 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

## 2.7 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch (25-mm) sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings.
- C. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic; free of plant-growth or germination inhibitors; with maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- D. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

## 2.8 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

## 2.9 PLANTING SOIL MIX

- A. Planting Soil Mix: Mix surface soil with the following soil amendments and fertilizers in the following quantities:
  1. Ratio of Loose Compost to Surface soil by Volume: [1:2]
  2. Ratio of Loose Wood Derivatives or Manure to Surface soil by Volume: [1:4]
  3. Weight of Sulfur, Iron Sulfate or Aluminum Sulfate per 1000 Sq. Ft. (92.9 Sq. m) as determined by soil test results.
  4. Weight of Commercial Fertilizer per 1000 Sq. Ft. (92.9 Sq. m) as determined by soil test results

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.



### 3.2 PREPARATION

- A. Protect structures, utilities, fencing, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.3 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted within 5 days.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches (100 mm).
  - 1. Apply compost and wood derivative mix to a total depth of 3 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
  - 2. Spread planting soil mix over loosened subgrade. Spread other amendments as determined by soil test. Mix thoroughly into top 6 inches of subgrade. Rerototill several times in perpendicular directions to incorporate mix thoroughly.
  - 3. Remove surface stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 4. Water thoroughly and allow soil to settle 2-3 days. Spread minimum 1" additional compost and roll immediately prior to seeding operations.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- D. Moisten prepared lawn areas before planting. Water entire area thoroughly with soluble endo mycorrhizae inoculant at manufacturer's recommended rate and allow surface to dry before planting. Do not create muddy soil.
- E. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

### 3.4 TEMPORARY SEEDING (Not Anticipated)

- A. Temporary vegetative cover shall be applied to any disturbed areas (including soil stockpile areas) that have not yet reached finished grade as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily ceased, unless the activity is to resume within twenty-one (21) days.).
- B. Immediately following the installation work in an individual area, the disturbed areas will be mulched with straw or seeded. This work shall consist of seeding and when necessary, mulching, fertilizing, liming, and applying nitrogen on all disturbed areas in order to limit the area of erodible material. The contractor should only use seed that conforms to all State laws and to all requirements and regulations of the South Carolina Department of Agriculture, SCDOT and applicable county regulations.

- C. Apply a minimum of 500 pounds per acre of 10-10-10 fertilizer (11.5 pounds per 1000 square feet) or equivalent during temporary seeding unless a soil test indicates a different requirement. Incorporate fertilizer and lime (if used) into the top 4-6 inches of the soil by disking or other means where conditions allow.
- D. No seed shall be sown during high winds or when the ground is not in a proper condition for seeding or shall any seed to sown until the purity test has been completed for the seeds to be used, and shows that the seed meets the noxious weed free requirements. Equipment shall be operated in a manner to insure complete coverage of the entire area to be seeded. When seed or fertilizer is applied with a hydraulic seeder, the rate of application shall be not less than 1,000 gallons of slurry per acre. This slurry shall contain the proper quantity of seed or fertilizer specified per acre. When using a hydraulic seeder, the fertilizer and seed shall be applied in two separate operations. Within 12 hours, all seed areas shall be rolled at right angles to the run-off with an approved type roller or cultipacker to compact the seed bed and place the seed in contact with the soil. On areas seeded with a hydraulic seeder, rolling shall not be required.
- E. Areas which have been temporarily seeded shall be mulched immediately following seeding in addition to areas which cannot be seeded within the recommended seeding dates and any soil stockpile areas. Temporary mulching should be performed as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily ceased unless the activity is to resume within twenty-one (21) days. Typical mulch applications include straw, wood fiber and hydromulches,. Use hydromulches with a minimum blend of 70% wood fibers.
- F. All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. Where erosion is observed, additional mulch must be applied. If netting is used, the net shall be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, the net must be reinstalled as necessary after repairing damage to slope. Inspections shall take place until grasses are firmly established. Grass is considered to be firmly established at a minimum height of three inches.

### 3.5 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h). Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
  - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
- B. Sow seed at the rate of 2 lb/1000 sq. ft. (0.9 kg/92.9 sq. m).
- C. Rake seed lightly into top 1/8 inch (3 mm) of surface soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets installed and stapled according to manufacturer's written instructions.
- E. Protect seeded areas with slopes not exceeding 1:4 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre (42 kg/92.9 sq. m) to form a continuous blanket 1-1/2 inches (38 mm) in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.

- F. Protect seeded areas from hot, dry weather or drying winds by applying additional compost or fiber mulch within 24 hours after completing seeding operations. Soak and scatter uniformly to a depth of 3/16 inch (4.8 mm) and roll to a smooth surface.

### 3.6 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application. Mix periodically during application so that smaller seeds do not settle.
  1. Mix slurry with nonasphaltic tackifier.
  2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre (15.3-kg/92.9 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate.

### 3.7 SATISFACTORY LAWNS

- A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm)
- B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

### 3.8 CLEANUP, PROTECTION, AND REPAIR

- A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect barricades and warning signs as required to protect newly planted areas from construction, and vehicular and pedestrian traffic. Maintain barricades throughout maintenance period and remove after lawn is established.
- C. Remove erosion-control measures after grass establishment period.

END OF SECTION